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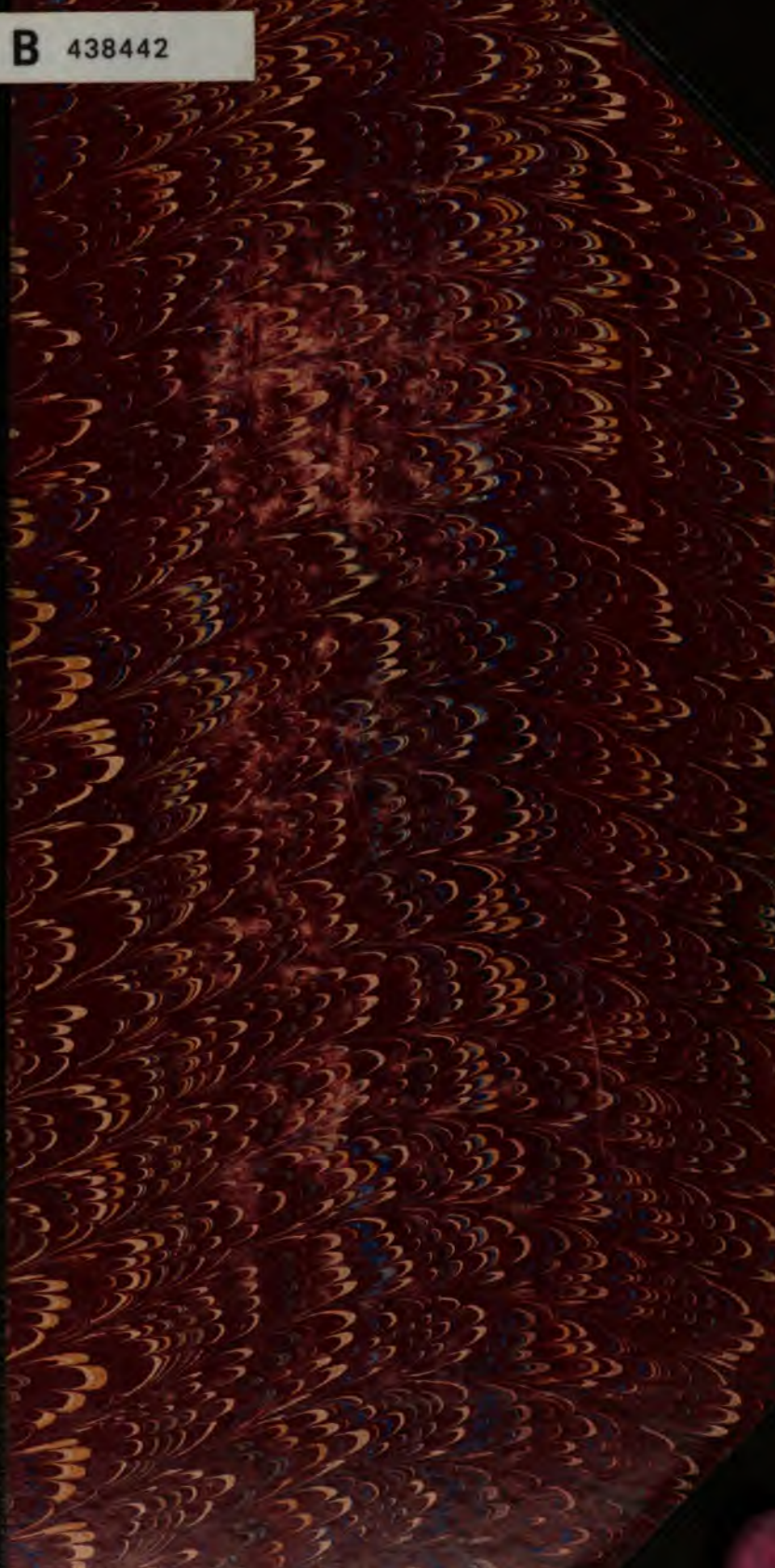
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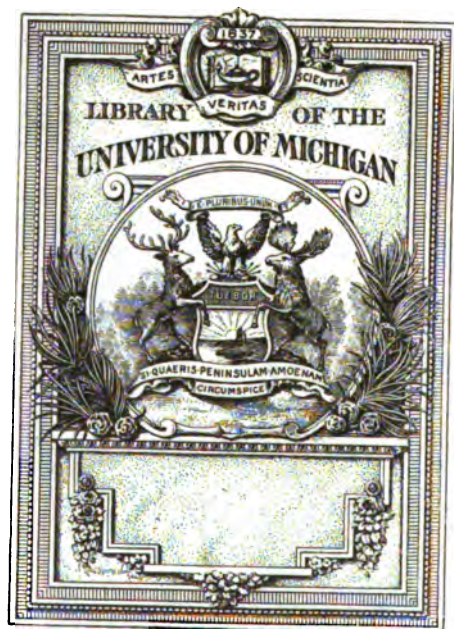
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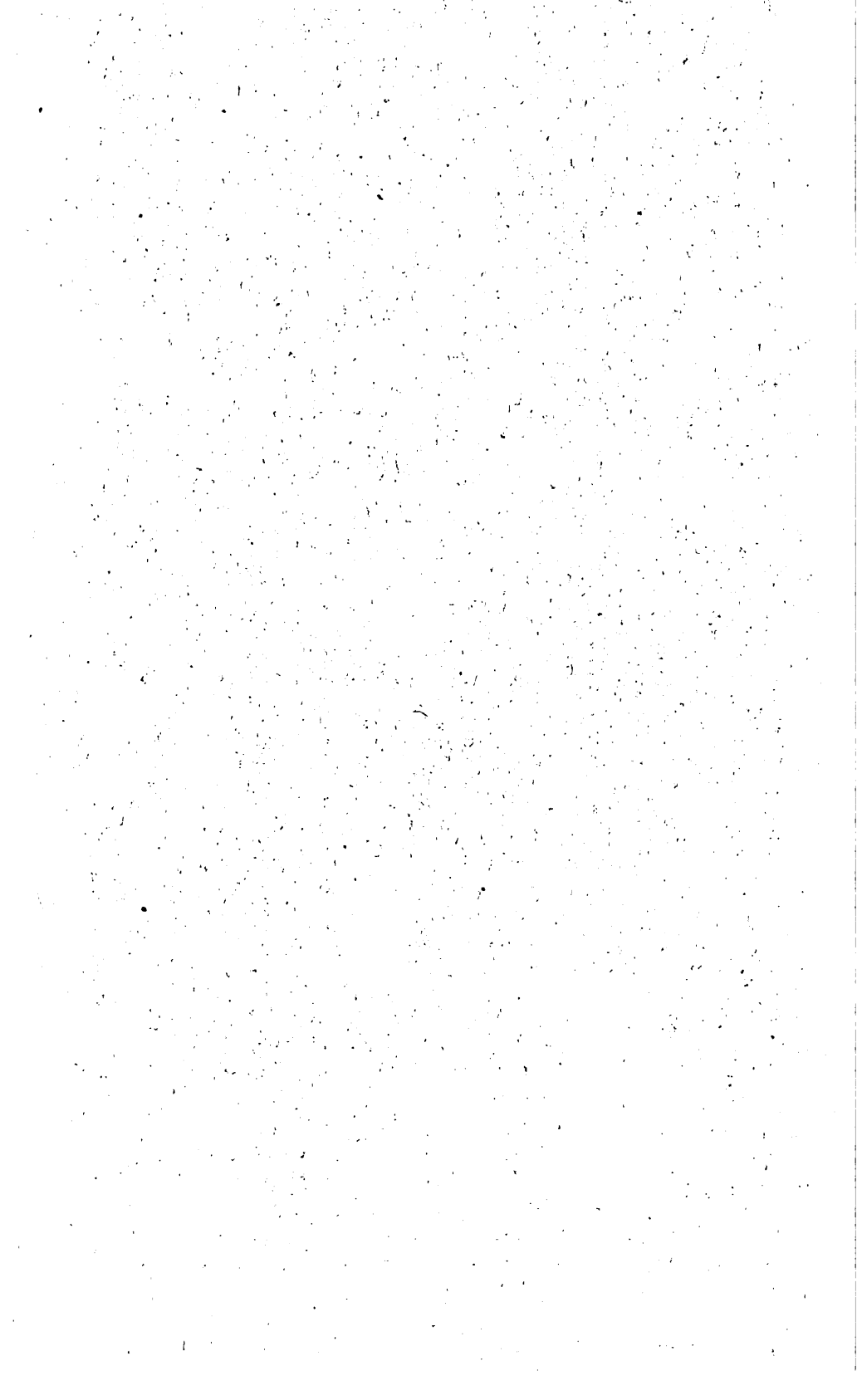
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CONSULAR REPORTS.

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COMMERCE, MANUFACTURES, ETC.

VOL. LXII.

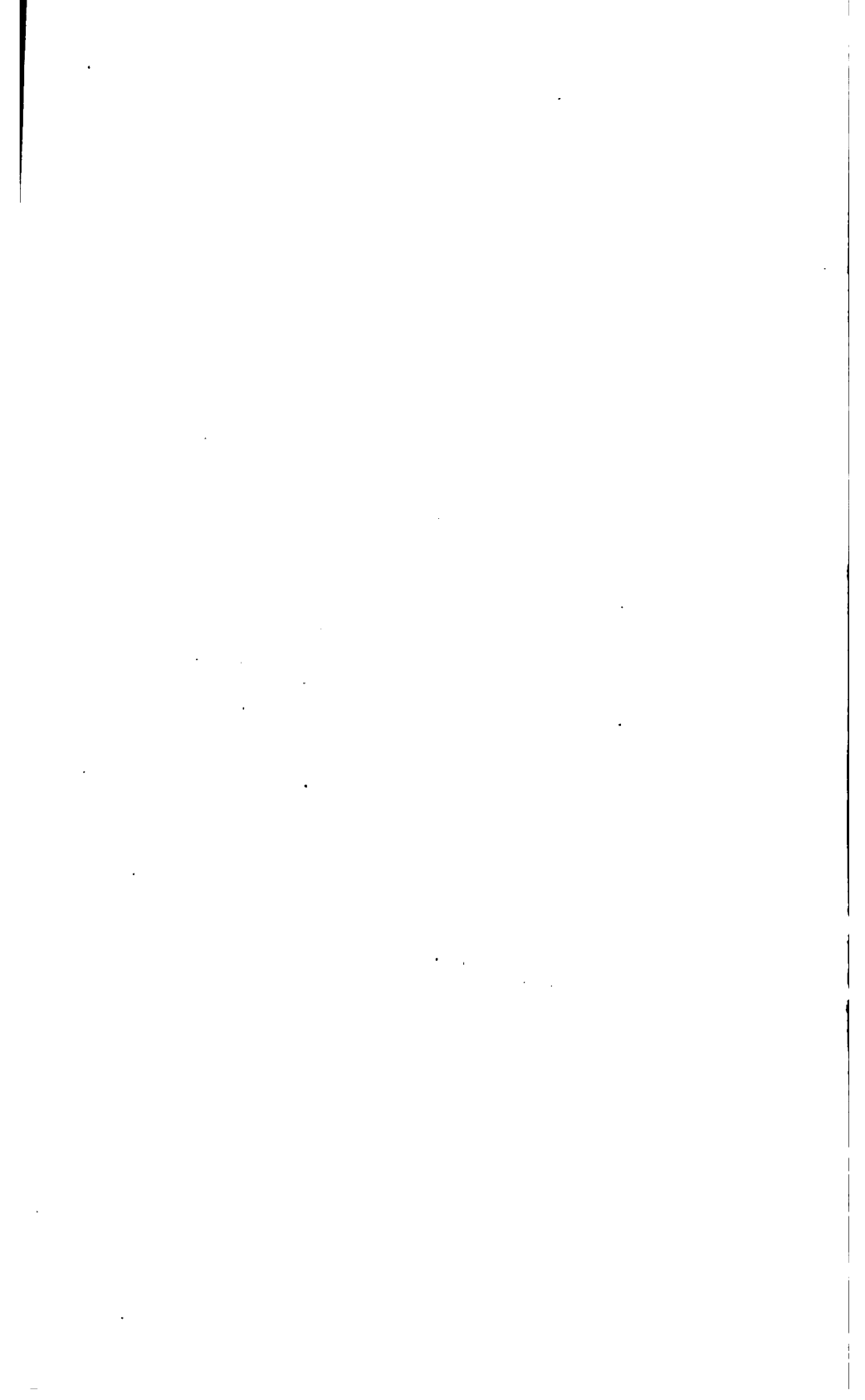
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VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston makes the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to \$20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States. The value of the Indian rupee, although calculated according to law at the value of the pure metal contained therein, has a commercial value above the value of the silver bullion; consequently the value for customs purposes is determined in each case by the consular certificates attached to the invoice of exports from that country to the United States."

The following statements, running from January 1, 1874, to October 1, 1899, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account

that the ruble of Russia, for instance, fluctuated from 77.17 cents in 1874 to 37.4 cents in April, 1897, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, 1882, and 1891-95 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

VIII VALUES OF FOREIGN COINS AND CURRENCIES.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic*.	Gold and silver..	Peso.....	\$0.96,5	Gold—Argentine (\$1.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†....	Gold	Crown.....	.20,3	Gold—20 crowns (\$4.05,2) and 10 crowns.
Belgium	Gold and silver..	Franc.....	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil.....	Gold	Milreis.....	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar.....	1.00	
British Honduras.....	do	do	1.00	
Chile.....	do	Peso.....	.36,5	Gold—escudo (\$1.25), doubloon (\$3.65), and condor (\$7.30); silver—peso and divisions.
Costa Rica.....	do	Colon.....	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centimos.
Cuba	Gold and silver..	do	.92,6	Gold—doubloon (\$5.01,7); silver—peso (50 cents).
Denmark.....	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Egypt.....	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	do	Mark.....	.19,3	Gold—10 and 20 marks (\$1.93 and \$3.85,9).
France	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark.....	.23,8	Gold—5, 10, and 20 marks.
Great Britain.....	do	Pound sterling..	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver..	Drachma.....	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	do	Gourde.....	.96,5	Silver—gourde.
Italy.....	do	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan‡.....	Gold.....	Yen.....	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia.....	do	Dollar.....	1.00	
Netherlands§.....	Gold and silver..	Florin.....	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar.....	1.01,4	Gold—\$2 (\$2.02,7).
Portugal.....	do	Milreis.....	1.08	Gold—1, 2, 5, and 10 milreis.
Russia |.....	.....do	Ruble.....	.51,5	Gold—imperial (\$7.718) and ½ imperial (\$3.80); silver—¼, ½, and 1 ruble.
Spain.....	Gold and silver..	Peseta.....	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster.....	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	Gold	Peso.....	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela.....	Gold and silver..	Bolivar.....	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875, the gold standard prevailed.

† The gold standard was adopted October 1, 1892. (See CONSULAR REPORTS No. 147, p. 623.) Values are still, however, frequently expressed in the florin or gulden, which is worth 2 crowns or 40.6 cents.

‡ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 559.)

§ See note to table of fluctuating currencies.

| For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896-97, p. 214.

B.—Countries with fluctuating currencies, 1874-1890.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1890; bolivi- ano there- after.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6		
China.....	Silver.....	Haikwan tael..	1.61	1.61				
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).			4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupce.....	.43,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	Gold.....	Yen.....	.99,7	.99,7	.99,7	.99,7		
	Silver.....						.87,6	.86,9
Mexico.....	do.....	Dollar.....	1.04,7‡	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡.....	Gold and Silver.	Florin.....	.40,5	.38,5	.38,5	.40,2		
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahhub of 20 piasters.	.87,09	82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; bolivi- ano there- after.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....				.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.94,3
India.....	Silver.....	Rupce.....	.37,8	.35,7	.34,6	.32,2	.32,3	.40,4
Japan.....	Gold.....	Yen.....			.99,7	.99,7	.99,7	.99,7
	Silver.....		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico.....	do.....	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahhub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies.

Countries.	Monetary unit.	1896.				1897.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.49,1	\$0.49,3	\$0.49,7	\$0.49	\$0.47,4	\$0.46,8	\$0.44,3	\$0.41,2
Central Amer-ica.	Silver peso.....	.49,1	.49,3	.49,7	.49	.47,4	.46,5	.44,3	.41,2
China.....	Amoy tael.....				.79,3	.76,7	.75,7	.71,7	.66,4
	Canton tael.....				.79	.76,5	.75,5	.71,5	.66,4
	Chefoo tael.....	.75,9	.76,3	.76,9	.75,8	.73,3	.72,4	.68,6	.63,7
	Chinkiang tael.....				.77,4	.74,9	.73,9	.70	.65,1
	Fuchau tael.....				.73,3	.70,9	.70	.66,3	.61,6
	Halkwan tael...	.80,8	.81,2	.81,9	.80,6	.78	.77	.73,1	.67,8
	Hankau tael.....				.74,2	.71,7	.70,8	.67,1	.62,3
	Ningpo tael.....				.76,2	.73,7	.72,8	.68,9	.64
	Niuchwang tael.....				.74,3	.71,9	.71	.67,2	.62,5
	Shanghai tael...	.72,5	.72,9	.73,5	.72,4	.70	.69,1	.65,5	.60,8
	Swatow tael.....				.73,2	.70,8	.69,9	.66,2	.61,5
	Takao tael.....				.79,8	.77,2	.76,2	.72,2	.67
	Tientsin tael.....	.76,9	.77,3	.78	.76,8	.74,3	.73,4	.69,5	.64,6
Colombia.....	Silver peso.....	.49,1	.49,3	.49,7	.49	.47,4	.46,8	.44,3	.41,2
Ecuador.....	do.....	.49,1	.49,3	.49,7	.49	.47,4	.46,8	.44,3	.41,2
India.....	Silver rupee.....	.23,3	.23,4	.23,6	.23,3	.22,5	.22,2	.21,1	.19,6
Japan.....	Silver yen.....	.52,9	.53,2	.53,2	.52,8	.51,1	.50,5		
Mexico.....	Silver dollar.....	.53,3	.53,6	.54	.53,2	.51,5	.50,8	.48,2	.44,6
Persia.....	Silver kran.....	.09	.09,1	.09,2	.09	.08,7	.08,6	.08,2	.07,6
Peru.....	Silver sol.....	.49,1	.49,3	.49,7	.49	.47,4	.46,8	.44,3	.41,2
Russia.....	Silver ruble.....	.39,3	.39,5	.39,8	.39,2	.37,9	.37,4		
Tripoli.....	Silver mahbub...	.44,3	.44,5	.44,9	.44,2				

Countries.	Monetary unit.	1898.				1899.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.42,4	\$0.40,9	\$0.41,8	\$0.43,6	\$0.43,9	\$0.43,4	\$0.44,3	\$0.43,6
Central Amer-ica.	Silver peso.....	.41,4	.40,9	.41,8	.43,6	.43,9	.43,4	.44,3	.43,6
China.....	Amoy tael.....	.68,3	.66,2	.67,6	.70,6	.71	.70,2	.71,6	.70,5
	Canton tael.....	.68,3	.66	.67,4	.70,4	.70,8	.70	.71,4	.70,3
	Chefoo tael.....	.65,5	.63,3	.64,6	.67,5	.67,9	.67,2	.68,4	.67,4
	Chinkiang tael.....	.66,9	.64,6	.66	.69	.69,3	.68,6	.69,9	.68,9
	Fuchau tael.....	.63,4	.61,2	.62,5	.65,3	.65,6	.65	.66,2	.65,2
	Halkwan tael...	.69,7	.67,3	.68,8	.71,8	.72,2	.71,4	.72,8	.71,8
	Hankau tael.....	.64,1	.61,9	.63,2	.66	.66,4	.65,7	.67	.66
	Ningpo tael.....	.64,3	.63	.65	.67,9	.68,2	.67,5	.68,8	.67,8
	Niuchwang tael.....	.65,9	.62	.63,4	.66,2	.66,5	.65,9	.67,1	.66,1
	Shanghai tael...	.62,6	.60,4	.61,7	.64,5	.64,8	.64,1	.65,4	.64,4
	Swatow tael.....	.63,3	.61,1	.62,4	.65,2	.65,5	.64,9	.66,1	.65,1
	Takao tael.....	.66	.66,6	.68	.71	.71,4	.70,7	.72	.71
	Tientsin tael.....	.66,4	.64,1	.65,5	.68,4	.68,8	.68	.69,4	.68,3
Colombia.....	Silver peso.....	.42,4	.40,9	.41,8	.43,6	.43,9	.43,4	.44,3	.43,6
Ecuador.....	do.....	.42,4	.40,9	.41,8	.43,6	.43,9	.43,4	.44,3	.43,6
India *.....	Silver rupee.....	.20,1	.20,1	.19,9	.20,7	.20,8	.20,6	.21	.20,7
Mexico.....	Silver dollar.....	.46	.44,4	.45,4	.47,4	.47,7	.47,2	.48,1	.47,4
Persia.....	Silver kran.....	.07,8	.07,5	.07,7	.08	.08,1	.08	.08,2	.08
Peru.....	Silver sol.....	.42,4	.40,9	.41,8	.43,6	.43,9	.43,4	.44,3	.43,6

* The commercial value of the rupee to be determined by consular certificate.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal.....	4.422 gallons.
Ardeb.....	Egypt.....	7.6097 bushels.
Are.....	Metric.....	0.02471 acre.
Arobe.....	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds.
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine.....	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovets.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bouw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar.....	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333½ (1½) pounds.
Do*.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, and Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner.....	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.

* More frequently called "kin." Among merchants in the treaty ports it equals 1.33½ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Desiatine.....	Russia.....	2,6007 acres.
Do.....	Spain.....	1,590 bushels.
Drachme.....	Greece.....	Half ounce.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1,5745 bushels.
Do.....	Chile.....	2,375 bushels.
Do.....	Cuba.....	1,590 bushels.
Do.....	Mexico.....	1,54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do.....	Uruguay (double).....	7,776 bushels.
Do.....	Uruguay (single).....	3,888 bushels.
Do.....	Venezuela.....	1,590 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddán.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2,506 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	Do.....	2.471 acres.
Hectoliter:		
Dry.....	Do.....	2.838 bushels.
Liquid.....	Do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	6 feet.
Kilogram (kilo).....	Metric.....	2,2046 pounds.
Kilometer.....	Do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Koku.....	Japan.....	4,0629 bushels.
Korree.....	Russia.....	3.5 bushels.
Kwan.....	Japan.....	8.28 pounds.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	11½ bushels.
Do.....	Spain (salt).....	4,760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2,115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quart.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Guiana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Load.....	England (timber).....	Square, 50 cubic feet; unhewn, 40 cubic feet; 1 inch planks, 600 super- ficial feet.
Manzana.....	Costa Rica.....	1½ acres.
Do.....	Nicaragua and Salvador.....	1.727 acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles.
Do.....	Denmark (geographical).....	4.61 miles.
Milla.....	Nicaragua and Honduras.....	1.1403 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pinta.
Pic.....	Egypt.....	21¼ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castile.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Pund (pound).....	Denmark and Sweden.....	1.192 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¾ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	496 pounds.
Se.....	Japan.....	0.02451 acres.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	11.9305 inches.
Sho.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (see cua- dra).
Sun.....	Japan.....	1.193 inches.
Tael.....	Cochin China.....	590.75 grains (troy)
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tambo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914119 yard.
Do.....	Central America.....	32.87 inches.
Do.....	Chile and Peru.....	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Vergees.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vlocka.....	Russian Poland.....	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.417 gallons.
 Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

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No. 232.

MANUFACTURE OF TILES IN FOREIGN COUNTRIES.

At the request of a tile dealer of Washington, a Department circular was sent, under date of January 25, 1898, to certain consular officers in Europe and Asia, requesting information relative to the tile industry in their respective districts. The answers received follow.

BELGIUM.

Several of the most important manufacturers to whom I addressed myself for the information called for in Department circular, replied that the majority of the questions submitted to them covered secrets of manufacture which they could not divulge. I therefore transmit the following incomplete data obtained from Messrs. Vanden Aa, the leading architect of Brussels; Boch Frères, manufacturers of faïence and ceramics, at La Louviere; and the Société Anonyme, at Hasselt, Belgium.

Mr. Vanden Aa informs me that, owing to the climate of Belgium, decorative or mural tiles are very little used in exterior decoration of buildings.

Messrs. Boch Frères are extensively engaged in the manufacture of all kinds of ordinary and artistic household and decorative objects in faïence and stoneware, including the manufacture of wall tiles in faïence and stoneware, the ordinary dimensions of which are 15 by 15 centimeters (5.9 by 5.9 inches) and 15 by 7½ centimeters (5.9

by 2.9 inches); average thickness, 1 centimeter (0.39 inch). The proportion of ornamental tiles to the cheaper grade of plain tiles manufactured by Messrs. Boch Frères is from 10 to 15 per cent.

MATERIAL AND ORIGIN.

The materials used are plastic and kaolin clays, feldspar, and ground glass. No waste products of iron and chemical industries are used. Clay and feldspar come from Cornwall and Devonshire, England.

Transportation charges from English seaports direct to La Louvière are 10.50 francs (\$2.02) per ton.

• FUEL.

The fuel used is coal and costs from 10 to 20 francs (\$1.93 to \$3.86) per ton, according to market fluctuation.

LABOR AND WAGES.

The force employed is two-thirds male adults and one-third children under 16 years of age. Men receive from 3 to 4.50 francs (57 to 87 cents) and children from 1.50 to 2 francs (29 to 38 cents) per day. Ten hours constitute a day's labor.

The factory was established in 1841. The personnel live near the works, within a radius of 9 miles.

The relation between owners and employees has, since the beginning of the industry until the present time, been harmonious.

Machinery is used in preparing the clay. The system employed in this factory in making tiles is the compression of dust by hand-power press. It is calculated that two workmen and an apprentice at each press can turn out from 1,000 to 2,000 tiles per day. The product is classed in three categories. First and second qualities are sold at a reduction of 20 per cent, and the third, or refuse, at 50 per cent reduction.

No encouragement is received from the Government for the development and technical advancement of the industry.

The Société Anonyme, of Hasselt, is almost exclusively engaged in the manufacture of glazed bricks and tiles.

There are few public buildings in Belgium and none in Brussels remarkable for their exterior ceramic or mosaic decorations. Occasionally, rooms in public buildings, court-houses, and railroad stations are laid with mosaic floorings. The above-named company has, however, furnished glazed bricks for exterior decorations for a large number of railway stations and the principal railway tunnels.

throughout the Kingdom. The manufacturers believe that, owing to the great solidity of their bricks and tiles, the beauty and vividness of color of the enamel, the hygienic advantages due to the impermeable nature of the product, which permits and facilitates frequent washing, in a very few years they will come into general use, especially in basements, cellars, halls, vestibules, and areas.

Transportation rates from Hasselt to Brussels by carload in bulk, from 5,000 to 16,000 kilograms (11,000 to 35,000 pounds), are 7.36 francs (\$1.42) per 1,000 kilograms (2,200 pounds); from La Louviere to Antwerp (about 100 kilometers=62 miles) per ton, unfinished, 11.44 francs (\$2.207), for not less than 5,000 kilograms (11,000 pounds), 8.02 francs (\$1.547); for 10,000 kilograms (22,000 pounds) for exportation, 6.25 francs (\$1.206).

I attach herewith price list and colored chart* showing colors and giving dimensions of the various products manufactured by the Société Anonyme, of Hasselt, Belgium.

Tariff of enameled tiles per 100 pieces, price free at the railway stations in Belgium, per minimum shipment of 500 kilograms (1,100 pounds).

Dimensions of the tiles.	Plain tiles.				Engraved tiles.			
	White.		Colored.		One color.		Several colors.	
	<i>Franks.</i>		<i>Franks.</i>		<i>Franks.</i>		<i>Franks.</i>	
6 by 6 centimeters (2 by 2 inches).....	12	\$2.32	15	\$2.90	17	\$3.28	27	\$5.21
10 by 10 centimeters (3.9 by 3.9 inches).....	15	2.90	19	3.67	29	5.60	45	8.69
12 by 12 centimeters (4.7 by 4.7 inches).....	18	3.47	23	4.44	35	6.76	55	10.62
15 by 15 centimeters (5.9 by 5.9 inches).....	22	4.25	29	5.60	45	8.69	69	13.32
20 by 20 centimeters (7.9 by 7.9 inches).....	32	6.18	44	8.49	90	17.37	150	28.95

Dimensions of the tiles.	Relief tiles.				Number of tiles per square meter.
	One color.		Several colors.		
	<i>Franks.</i>		<i>Franks.</i>		
6 by 6 centimeters (2 by 2 inches).....	22	\$4.25	32	\$6.18	278
10 by 10 centimeters (3.9 by 3.9 inches).....	34	6.56	54	10.42	100
12 by 12 centimeters (4.7 by 4.7 inches).....	40	7.72	64	12.35	69
15 by 15 centimeters (5.9 by 5.9 inches).....	48	9.26	80	15.44	45
20 by 20 centimeters (7.9 by 7.9 inches).....	110	21.23	180	34.74	25

Majolica ornamental panels, per square meter.

Franks.

Various views	150=	\$28.95
Landscape, with subject.....	200=	38.60
Compositions, with figures.....	250=	48.25
Panels, with several figures, scenes, etc., price as per agreement.		

* Filed for reference in the Bureau of Foreign Commerce.

Price of enameled bricks per 100 pieces f. o. b. Hasselt.

Description.	Binders.		Stretchers.		Angle (binders and stretchers).	
	Francs.		Francs.		Francs.	
<i>White and cream.</i>						
Bricks (13 by 6.25 by 3.5 centimeters=5 by 2.4 by 1.37 inches).....	12.00	\$2.32	13.50	\$2.51	15.00	\$2.90
Boom size (17.5 by 8.5 by 5 centimeters=6.8 by 3.3 by 1.9 inches).....	20.00	3.85	21.00	4.05	23.00	4.44
French or Brussels size (22 by 10.75 by 6.3 centimeters=8.7 by 4.23 by 2.48 inches).....	22.00	4.25	24.00	4.63	26.00	5.02
English size (22.5 by 11 by 7.3 centimeters=8.9 by 4.3 by 2.8 inches).....	25.00	4.83	27.00	5.21	29.00	5.60
<i>Various colors.</i>						
Bricks (13 by 6.25 by 3.5 centimeters=5 by 2.4 by 1.37 inches).....	16.00	3.09	17.00	3.28	19.00	3.67
Boom size (17.5 by 8.5 by 5 centimeters=6.8 by 3.3 by 1.9 inches).....	25.00	4.83	26.00	5.02	27.00	5.21
French or Brussels size (22 by 10.75 by 6.3 centimeters=8.7 by 4.23 by 2.48 inches).....	28.00	5.30	30.00	5.79	32.00	6.18
English size (22.5 by 11 by 7.3 centimeters=8.9 by 4.3 by 2.8 inches).....	33.00	6.37	35.00	6.76	36.00	6.95

Special bricks for ornamenting old walls (dimensions, 22 by 6.3 by 5 centimeters=8.7 by 2.4 by 1.9 inches), per square meter.

Francs.

White and cream..... 14 $\frac{1}{2}$ \$2. 70
 Other colors..... 20= 3. 86

GEO. W. ROOSEVELT,

BRUSSELS, April 26, 1899.

Consul.

DENMARK.

Art tiles and mosaics are mostly imported from Great Britain and Germany, but, as they are not specially classified by the customs, I am unable to give reliable statistics.

Building operations throughout the Kingdom are flourishing, the demand for art mosaics is steadily increasing, and I have no doubt but American manufacturers can compete in price and quality. Manufacturers should address V. Boye & Watt, 23 Løngangstræde, Copenhagen, who are willing to act as agents.

The commercial agency of P. V. Fournais & Co., 16 gammel Toro, Copenhagen, can, for a small fee, rate any firm in Denmark.

I know of two Danish manufacturers—viz, Kornerup Bang, in Silkeborg, Denmark, and E. Nielsen, 44 Nørrebrogade, Copenhagen—whose catalogues I inclose,* and, as they give prices, sizes,

* Filed for reference in the Bureau of Foreign Commerce.

and designs, I trust the information therein conveyed will satisfy the American manufacturers, as the Danish manufacturers are unable or unwilling to answer the questions propounded.

The use of tile floors is not compulsory by law.

COPENHAGEN, *March 3, 1899.*

JULES BLOM,
Vice and Deputy Consul.

FRANCE.

LIMOGES.

The clays and earths necessary to manufacture tiles, in the following Departments, are usually taken from the locality in which the kilns are built, except in the making of mosaics from marble, when the different colored stones are brought to the factory from many lands and Departments of France.

Several works in the Department of Cher are situated on the Canal du Berry, on which coal and clay are carried, and the manufactured goods are also shipped by the same way to the seacoast; all other transportation is done by railroads.

The cheapest kinds of tiles are made from the ordinary red clay, and higher grades from silicious sandstone (grès), grit stone (grès dur), refractory grit (grès réfractaire), kaolin, etc. Some of the bright-red tiles for floors, roofs, and pavements are very fine, resisting all changes of temperature; the most celebrated in this part of France are made at Montchanin, Department of Saône et Loire (not included in this consular district).

There is being established in Limoges a factory for manufacturing art tiles from *pâte dure*; they will be colored and decorated under glaze for exterior use and over glaze where the elements will not injure the decorations. Ornamental bricks are also made from this same *pâte dure*, all coloring being done under glaze. Plain white ones will be made for sanitary uses.

The École des Beaux Arts and the Halles Centrales have cornices and ornamentations on the outside and inside of tiles and bricks made from kaolin. The enamel is very hard and the coloring is under glaze; they are practically imperishable. Those used on the exterior of the École des Beaux Arts cost about 15,000 francs (\$2,895).

In front of the city hall is a fountain beautifully ornamented with plaques and tiles of *pâte dure* inclosed in bronze frames and partitions.

As only a very small proportion of the French private houses have bathrooms, there is very little demand for handsome artistic tilings for this purpose in France; but quite a large quantity of art tiles are made for exportation. Common faïence or pottery tiles are used in butcher shops and railroad toilet rooms, and marble cement and cement floorings in abattoirs. Cement, cement mosaics, and fine red tiles are laid in hall ways, kitchens, and dining rooms in hotels, railroad stations, and some private houses.

Messrs. Pillivuyt & Co., Mehun, Department of Cher, have a well-equipped factory and manufacture all kinds of sanitary china ware and tiles; M. Frugier, Limoges, also makes the same kind of goods.

Some beautiful tiles have been made from "grès." This clay can be fired at a high temperature and takes a brilliant glaze; it is also capable of being delicately colored under and over glaze.

Tiles are made from refractory clay and covered with different colored enamels; they are exceedingly costly and are therefore not better known. Many faïence tiles are manufactured and, as the palette is much larger than that for kaolin, they present a more attractive appearance to the uninitiated buyer.

All these goods are made from plastic clays, and none by the dust process. Machinery is used in the large factories and hand power in the smaller ones. The thickness of the tiles and bricks varies according to the use to which they will be put, running from 1 to 3 inches for tiles and from 3 to 5 inches for bricks. They can be made of any size, shape, or form to suit the purchaser.

Factories have been established in the following Departments for manufacturing tiles, bricks, and mosaics:

Department of Cher.—Foëcy, Mehun, Vierzon, Celle-Bruère, Henrichemont, Bourges, Charenton, St. Armand, Châteauneuf, St. Florent, La Guèrche Sancoins, Farges, St. Satur—tiles, faïences, china, red tiles, and bricks.

Department of Correze.—Tulle, Brive, Douzenac, Neuvic—faïence and sanitary goods.

Department of Creuse.—Bourganeuf, Genouillat, Le Cellette, Maleret, Sargent, and Saunat—red tiles.

Department of Dordogne.—Thiviers and several other towns have tile, brick, and faïence works; but the wares are not exceedingly fine in quality or decoration.

Department of Haute-Vienne.—Limoges, Rochechouart, Thiat, and Saint Junien (Mr. Mabile, 20 rue des Argentiers, Limoges; Mr. Duthiel, 19 Av. de la Gare d'Orléans, Limoges)—tiles and bricks of "grès," kaolin, faïence, mosaics; also mosaics of marble and cement.

Department of Indre.—St. Genou, Villedieu, Argenton—coarse china tiles, fine and common red tiles.

Department of Nièvre.—Nevers, Myennes—tiles and tilings.

Department of Puy-de-Dôme.—Rillom, Ravel, and Pontaumur—tiles and imitations of Roman pottery.

LIMOGES, May 29, 1899.

A. JOUHANNAUD,
Vice Commercial Agent.

NICE.*

For many years, the greater part of the red hexagonal tiles used for pavements has been furnished throughout the Department of the Alpes-Maritimes by the various factories existing at Salernes, Villecroze, and Lorgues, in the neighboring Department of the Var. In view of the disposition shown by our manufacturers to introduce American hard-wood floors abroad and of the increasing demand here for wood floors, I think it desirable to inform the Department that the manufacturers of the places named above, to the number of twenty, have formed a syndicate with a capital of 2,500,000 francs (\$482,000), and have given notice that the prices current of their tiles have been raised as follows per thousand:

Quality.	Diameter of 0.105.*		Diameter of 0.14 *	
	Francs.		Francs.	
Extra	25	\$4.82	60	\$11.58
No. 1.....	22	4.24	45	8.68
No. 2.....	20	3.86	42	8.10
No. 3.....	18	3.47	38	7.33

*The consol has not qualified the diameter; it is assumed he meant meters.

The expense from factory to railway, amounting to 25 centimes (4.8 cents) for the smaller and 50 centimes (9.6 cents) for the larger, per thousand, is to be added, as well as freight to Nice and cartage to destination, the whole increasing the prices above noted by about 3.50 francs (67 cents) per thousand. These tiles are the hexagonal-shaped ones universally used here. The advance in price over previous rates ruling here is from 25 to 50 per cent, and thus renders even more favorable than before the probability of the successful competition of American manufacturers.

NICE, June 15, 1899.

HAROLD S. VAN BUREN,
Consul.

*This report was not in answer to Department circular, but has been included in the series because of its similarity of interest.

ROUBAIX.

Three kinds of tiles are manufactured in this consular district, viz, common red tiles, glazed and enameled tiles, and mosaic tiles. There are three manufacturers of the latter variety.

Tiles 16 centimeters (6.3 inches) square by 2 centimeters (0.79 inch) thick and those 14 centimeters (5.5 inches) square are most commonly used.

Terra-cotta tiles in the style of those made at Auneuil, Beauvais, and Marseilles are superior to the red tiles of small value manufactured from the clay of this district. There are numerous factories for the manufacture of the ordinary red tiles.

There are eight or nine factories in France which manufacture gray ceramic, both plain and in patterns.

The clay employed comes from the center of France, Belgium, and Germany. The German clay is the best. Old tiles, slag, and foundry refuse are mixed with the clay, which is made into a paste, dried, and then powdered. Before mixing, the slag and foundry refuse are put into a powerful crusher, then passed on to the edge runners, in which way a fine powder is secured. The two powders—from the clay and from the crushed slag and refuse—are mixed in the proportion desired, ready for the molders, who make the squares and pass them on to the pressmen, who place them under the press, regulated for the size and thickness of tile required. The coloring matter employed consists of chlorates and oxides of different varieties.

Soft coal is used, and costs from 18 to 20 francs (\$3.47 to \$3.86) per 1,000 kilograms (2,204 pounds), according to the mines that furnish it.

Men predominate as laborers; women are employed to make designs for tiles, and girls trim the tiles as they come from the press and prepare them for the enameler.

Wages vary according to locality and factory, the usual price being from 10 to 30 centimes (2 to 6 cents) per hour, according to the quality of work performed. The workday is ten hours. Fires are kept up by squads that relieve one another every eight hours. Labor troubles seldom arise, as the salaries paid are considered satisfactory for the work done. Competent high-class workers are paid 25 to 30 francs (\$4.82 to \$5.79) per week, working ten hours per day; others, 15 to 17 francs (\$2.89 to \$3.28); and still others, 12 to 15 francs (\$2.31 to \$2.89).

Machinery is used in all modern tile works, hand presses being found only in small factories.

The raw product is apparently not graded as in America, as information obtained refers only to grading the tiles, the grades varying according to the types used in different factories. The refuse is crushed and used again in remixing. There is very little market for tiles spoiled in firing; these are usually crushed and used again. When a buyer can be found, they sell for from 50 centimes to 1 franc (9.6 to 19.3 cents) the square meter (10.76 square feet).

There are no laws prescribing the use of tiles in bathrooms, etc.; sanitary inspectors, however, approve of them.

I am told there is no Government encouragement of this industry.

The following public buildings are noticeable for their tile or mosaic work and polychrome decoration: Palais des Beaux Arts, Palais Rameaux, École de Medecine, situated in Lille, Eglise de la Madeleine-lez-Lille, Hotel de Ville Loos-lez-Lille.

The tiles are cleaned with soapsuds made from white Marseilles soap.

The use of tiles for the exterior of buildings is not very general as yet.

For prices of tiles, see inclosed price list.* The work of laying is from 2.50 to 3 francs (48 to 57 cents) the square meter (10.76 square feet), according to the work.

Freight rates are regulated by distance and are under Government control.

Addresses of manufacturers are as follows: Simons & Co., Le Cateau, branch office in New York; Bach Brothers, Louvroil; L. De Smet & Co., Canteleu-Lille.

The De Smet establishment is at present engaged in high-class mosaic work for the Paris exposition.

If information on certain points requested be not as full as desired, I respectfully request that the practical impossibility of getting any information whatever in regard to French industries be considered. There is a growing jealousy of foreign competition, and many establishments refuse absolutely to discuss their business or to give the slightest details with regard to it.

W. P. ATWELL,
Commercial Agent.

ROUBAIX, *February 28, 1899.*

* Filed for reference in the Bureau of Foreign Commerce.

GERMANY.

In compliance with the Department's instruction of January 25, requiring a report on the manufacture and use in this consular district of glazed and unglazed plain and embossed floor and mural tiles, I have to report as follows:

Tiles for flooring, wainscoting, and mural decoration are much used in Berlin, particularly in the best class of modern houses and public buildings. Kitchens, bathrooms, lavatories, and, in many cases, corridors are both floored and wainscoted with tiles. The Hotel Bristol and many other prominent buildings in Berlin are wainscoted throughout and most of the halls and corridors floored with tiles, and their use in the construction of residence, business, and public buildings is rapidly increasing throughout Germany.

There is, so far as I have been able to ascertain, no manufacture of glazed or embossed tiles and mosaics in the consular district of Berlin, for the alleged reason that this part of Germany has a sandy soil and does not furnish the requisite qualities of clay for such manufacture. Tiles are furnished to the city of Berlin mainly through two important firms which have large depots in this city, as follows:

(1) Messrs. Villeroy & Boch, No. 31 Kur-Strasse, who have immense manufactories at Merzig, in Rhenish Prussia, and at Mettlach-on-the-Saar, both in the district of Mainz-on-Rhine.

(2) N. Rosenfeld & Co., 11 and 12 Mohren Strasse, Berlin, agents of Messrs. Ulz, Schneider & Co., manufacturers of tiles at Saargemund, Alsace, in the consular district of Kehl.

The remoteness of these factories, which are in the extreme west of Germany and under another consular supervision, renders it impossible for me to make a personal study of the processes and conditions of manufacture, labor employed, wages paid, freights on materials, etc., all of which can be obtained only by personal application at the place of manufacture; but from the illustrated catalogues and the large series of sample cards printed in colors, together with the detailed price lists of both firms, which are transmitted as inclosures with this report,* a very clear and correct idea of the colors, combinations, cost, and general artistic effect of their products may be derived.

Flooring tiles (Bodenplatten) vary from 15 to 17 centimeters (6 to 6¾ inches) in breadth and from five-eighths to seven-eighths of an inch in thickness.

The cost of laying is from 1.25 to 1.50 marks (29.7 to 36 cents) per square meter (10.76 square feet), exclusive of the cost of cement

* Filed for reference in the Bureau of Foreign Commerce.

and all materials. One good workman will lay about 8 square meters per day.

Tiles for wainscoting (Wandplatten) and mural decoration are thinner than those for flooring, and are of varied sizes and forms, the sizes most in use being 15 by 7½ centimeters (6 by 3 inches), 15 by 15 centimeters (6 inches square), 13 by 13 centimeters (5¼ inches square), respectively. Setting such tiles is a much slower and more difficult process than that of laying flooring tiles, and costs from \$1.19 to \$2.38 per square meter.

Another important source of supply for flooring tiles in Berlin is the works of Richard Schäffer, at Silesian Lissa, in the consular district of Breslau. This firm has five depots in different parts of Berlin and supplies flooring tiles of the twenty different patterns shown by the colored sample cards herewith inclosed.* These tiles cost (according to the marks in red ink on the sample cards) from 10.50 to 13 marks (\$2.49 to \$3) per square meter (10.76 square feet), including the labor and materials required in laying.

FRANK H. MASON,
Consul-General.

BERLIN, *March 30, 1899.*

GREAT BRITAIN.

LIVERPOOL.

I regret that I have not been able to procure the information asked for in detail. There are several manufacturers of tiles and mosaics in this consular district, and I have made unsuccessful endeavors to procure from these firms the information sought for. My observation is that there is a growing disposition among British manufacturers and others to decline to give information relating to their business, when they have reason to believe that it is to be used for the purpose of competition.

Of recent years, there has been an enormous development in England in the use of glazed bricks, tiles, and mosaics, both for ornamentation and for sanitary work; and this increased use, at least so far as Liverpool is concerned, is owing altogether to choice on the part of the builders and owners, and not because of any special requirements of the local government or of insurance companies. Glazed brick, tiles, and mosaics are found to be peculiarly adapted to conditions, both architectural and climatic, existing here. The basements of buildings are used for offices and general business purposes much more than in the United States, and glazed bricks, tiles, and mosaics are coming into use a great deal in their construction, as

* Filed for reference in the Bureau of Foreign Commerce.

they are light and cheerful and can be kept clean very easily, and are not affected by the prevailing dampness like ordinary bricks. These materials are also widely used for hall ways in large buildings.

The following are the names of the manufacturers of tiles and mosaics in this district:

J. C. Edwards, Ruabon.

Monk & Newell, Ruabon.

J. & W. Powell & Co., Rhos, Ruabon.

Roberts & Maginnis, Garth Brick Works, Trevor, Ruabon.

Ruabon Brick and Terra Cotta Company, Ruabon.

Henry Whyndham, the Delph Brick and Fire Clay Works, Ruabon.

JAMES BOYLE,

LIVERPOOL, *March 29, 1899.*

Consul.

MANCHESTER.

The kinds of tiles that have been adopted are floor tiles, wall tiles, ceiling tiles, and furniture tiles, and the thicknesses vary from one-fourth of an inch to 1 inch. The proportion of higher grade ornamental to the cheaper grade of plain tiles varies in every factory.

The kinds of clays used are legion, and the auxiliary chemicals are nearly as numerous, and, so far as I know, no "waste products" of iron and chemical industries are employed, although a number of products of the chemical and iron industries are used.

The fuel used is coal, the cost of which varies according to the market and quality.

The proportion of male, female, and child labor would necessitate a census of every factory; the rates of wages ditto. The hours of labor are never more than twelve, and are generally about ten, including mealtime. Labor troubles may be said not to exist in this industry, and most of the laborers live within easy access of the works.

The sorting is done by hand, after inspection. Best tiles, as a rule, are worth one-third more than seconds, and third grade one-third of first-class tiles.

No sanitary or insurance laws prescribe the use of floor tiles in this country.

The Government does not encourage the development of the trade, or the technical advancement of the industry, outside of educational schools of art and technical education.

Some of the Government offices are very fine specimens of the old-fashioned encaustic, such as the Houses of Parliament.

Most people clean their floors with soap and water. Tiles are not much used for the outside of buildings.

Freight charges for tiles come under what is known as Class C, which is controlled by the act of Parliament and the clearing-house charges. Packing charges are extra—about 12 cents a yard—for tiles.

Addresses of manufacturers are:

J. Armitage & Son (ridge, roof, floor, and hearth tiles), Lees street, Ancoats, Manchester.

J. C. Edwards (Ruabon), 8 South Parade, St. Mary's street, Deansgate, Manchester.

John Hall & Son, 6 Meadow street, Great Ancoats street, Manchester.

W. Hill & Son, Urmston, near Manchester.

Isherwood Bros., Irwell street, Salford.

Ludwig Oppenheimer (mosaic), Blackburn street, Stamford street, Old Trafford, near Manchester.

J. & H. Patteson (marble mosaic), 36 and 38 Oxford street, Manchester.

Pilkington Tile and Pottery Company, Limited, Clifton Junction, near Manchester.

C. P. Sutcliffe & Co., Limited, Broughton Tile Works, Sussex street, Lower Broughton, Manchester.

WILLIAM F. GRINNELL,

MANCHESTER, *April 24, 1899.*

Consul.

TUNSTALL.

Floor tiles are made from three-eighths to three-fourths of an inch thick—usually half an inch; wall tiles are generally three-eighths of an inch thick. These thicknesses have been found by experience to be most suitable. The proportion of higher grade and ornamental tiles varies in the different factories, but probably bears the proportion of one to three in quantity.

A good many of the red and buff clays found in this district are used for the colored tiles, but for the white tiles the white clays and flints from the south coast of England are employed, as in the earthenware trade. The sea freight to Runcorn per ton is 4s. 6d. to 5s. 6d. (\$1.09 to \$1.34). The canal rate from Runcorn to the potteries is 6s. 8d. (\$1.62) per ton. The fuel used in firing is locally mined coal, supplied at about 10s. 6d. or 11s. (\$2.55 or \$2.68) per ton.

LABOR.

Out of each twenty-four hands employed in the manufacture of tiles here, nine are men, nine women, and six young persons, generally an equal number of boys and girls. This is an approximate

estimate. Male labor receives from 30s. to 45s. (\$7.30 to \$10.95) a week; female labor, from 8s. to £1 (\$1.95 to \$4.86) a week. The hours of labor are from 8 a. m. to 6 p. m.; Saturdays, from 8 a. m. to 12 noon. No strikes or lockouts have occurred in the tile industry here for many years. The hands live in the towns and villages of the potteries, in many cases close to the factories. When living farther off, trains and street cars help them to reach their work. Most of them live within a radius of 2 miles of the works.

MACHINERY.

Machinery is used entirely in the preparation of the clays, and the tiles are made under hand-screw presses. The plastic method of making encaustic tiles is largely dying out and being superseded by the dust-encaustic process. The hand-power presses are universal in this district, and I can not learn of the use of any steam presses in the neighborhood, though I believe such are used on the Continent for tile making. The average production of factories in proportion to employed help I am unable to ascertain. However, tile making is so simple and expeditious that far larger quantities are produced by each hand than in any other pottery manufacture.

MANNER OF GRADING THE PRODUCT.

The product is graded on being drawn from the ovens and kilns into "bests," "seconds," and "lump," or "thirds." One-third approximately is taken off the "best" price for the "seconds" goods, and "lump" goes at what price can be got. What is too bad for "lump" is broken and thrown away. The "lump" is usually sold to dealers in that grade, who dispose of it for inferior buildings.

PROPORTIONATE QUANTITIES USED.

The proportionate quantities of plain and ornamental tiles used for floors and walls may be put, roughly speaking, at one-fourth ornamental to three-fourths plain; but, of course, this varies considerably in each order.

SANITARY AND INSURANCE LAWS.

I am unable to learn of any law compelling the use of tiles for the floors of kitchens, toilet rooms, baths, and abattoirs; but they are largely increasing in use for these purposes, and also for the walls of buildings and the entire lining of public baths.

GOVERNMENT AID.

The Government does not aid in the advancement of the industry, except, to a limited degree, in the direction of art and technical education, which is considered of little benefit.

BUILDINGS.

Many municipal buildings, baths, large hotels, hospitals, and railway stations now make use of tiles for decoration in plain and mosaic work. Wall tiles are easily washed with a hose, as is often done in hospitals. Tiles are of great service in the operating rooms of hospitals, both for walls and floors, and are usually cleaned with soft soap and water, where the hose is not sufficient.

USE FOR EXTERIOR OF BUILDINGS.

Tiles are not much used in external decoration of buildings on account of the risk of damage from the weather through frost and damp. The external decoration of buildings here is generally done with large architectural pieces which stand the weather, but these are usually manufactured by brickmakers.

MANNER OF CONDUCTING TILE BUSINESS.

The tile business is conducted in much the same way as the earthenware business, except that one must advertise in several building newspapers to bring the goods before architects and contractors, and separate travelers have to be employed in order to show samples of flooring and walling patterns to the public. The labor is usually divided into clay preparers, tile makers, biscuit-oven hands, glazing-oven hands, printers, biscuit warehouse, glazing warehouse, floor-tile warehouse, and draftsmen. The latter draw out plans daily. The plans have to be made to scale, and the tiles counted for the required spaces. The business must be conducted separately from any other, as it needs entirely different experience.

PRICES OF TILES.

Plain wall tiles vary in price from 6s. to 15s. (\$1.46 to \$3.65) per square yard. Plain floor tiles vary in price from 3s. 6d. to 10s. (85 cents to \$2.43) per square yard. Ornamental tiles vary largely from 15s. (\$3.65) per square yard to hand-painted panels at many pounds each. The cost of tile floor laid runs from 10s. (\$2.43) per square yard upwards, according to tiles used and space to be covered.

FREIGHT RATES, MARKETS, ETC.

The rate of freight and collection to Liverpool, a distance of 52 miles by canal, is, for goods under 4 tons, 12s. 1d. (\$2 94) per ton; over 4 tons, 11s. 3d. (\$2.74) per ton; by rail—under 2 tons, 13s. 1d. (\$3.18) per ton; over 2 tons, 10s. 2d. (\$2.47) per ton.

All railways and canals here are independent of Government control.

Packing charges are from 6d. to 9d. (12 to 18 cents) per square yard.

The American market is more or less closed to British manufacturers, on account of the good articles at reasonable prices made in the United States. On the Continent, heavy competition is also met by reason of cheapness of labor. Moreover, all goods have to be packed in cases which will stand the journey to the Continent, whereas continental manufacturers can pack goods loose in truck to their destination.

The following are the names and addresses of art-tile and mosaic manufacturers in my consular district:

The Crystal Porcelain Tile Company, Cobridge, Stafford, England.

The Marsden Tile Company, Burslem, Stafford, England.

Malkin, Edge & Co., Burslem, Stafford, England.

Brown-Westhead, Moore & Co., Hanley, Stafford, England.

Josiah Wedgwood & Sons, Etruria, Stafford, England.

Mintons, Stoke-on-Trent, Stafford, England.

Minton, Hollins & Co., Stoke-on-Trent, Stafford, England.

Campbell Tile Company, Stoke-on-Trent, Stafford, England.

PLAIN FLOORING TILES.

The kind of flooring tiles most used here are square and known as "quarries," of the following sizes: 4 by 4 inches by $\frac{3}{8}$ inch, 6 by 6 inches by 1 inch, 6 by 6 by $1\frac{1}{4}$ inches, 9 by 9 by $1\frac{1}{4}$ inches, 12 by 12 by $1\frac{1}{2}$ inches.

There is a much larger trade in the ordinary pressed quarry than in those of extra finish; the ordinary pressed being largely used for kitchen floors in cottages and small houses where the wear and tear is great.

MARLS.

Argillaceous marls are used only in the manufacture of the tiles. No waste products are used. Marls are mostly manufactured into quarries at works situated on the spot where marls are gotten; but in some cases, where the marls are becoming exhausted, as in old-established works, marl is brought from other places in the neighborhood.

There are three kinds of marl used for the colors in which floor tiles are mostly produced, viz, red, blue, and buff. For each description, a combination of several strata is used.

Blue and red quarries are sold at the same price, though blue takes more fuel to produce and generally involves nine hours' firing.

PRICES, WAGES, ETC.

The following table shows the selling prices of quarries, or floor tiles, per 1,000 in this consular district:

Description.	Price.		Weight per 1,000.	
	Shillings.		Tons.	Cwts.
Red or blue, ordinary:				
4 by 4 inches by $\frac{1}{4}$ inch.....	25	\$6.09	0	9
6 by 6 inches by 1 inch.....	35	8.52	1	2
9 by 9 by $1\frac{1}{4}$ inches.....	80	19.47	3	5
12 by 12 by $1\frac{1}{4}$ inches.....	200	48.87	7	0
Red or blue, extra finish:				
4 by 4 inches by $\frac{1}{4}$ inch.....	35	8.52	0	9
6 by 6 inches by 1 inch.....	45	10.95	1	2
9 by 9 by $1\frac{1}{4}$ inches.....	90	21.90	3	5

All prices quoted are for goods free on rail and are subject to a discount of 5 per cent if paid within one month. For brindled quarries, red or blue, 15 per cent is deducted from above prices.

The best coal is used in firing. Red and buff 6-by-6-by-1-inch quarries take about half a ton per thousand to produce; blue, about 12 cwts. The cost of coal is, say, 10s. 6d. (\$2.55) per ton, but varies according to distance from coalpits.

In many works, small quarries are made and pressed by women. In the best works, however, women only help the men in taking the quarries from the makers, laying them on the flues, bringing them after drying to the press, and stacking them after pressing.

Quarries are made per thousand, and the maker employs either women or boys to assist him in the operations. The rate of wages for 6-by-6-by-1-inch ordinary pressed quarries and other sizes and qualities in proportion is as follows: For preparing clay, including getting marls from marl hole, per thousand quarries, 3s. (73 cents); for making, 6s. 6d. (\$1.58); for firing, 4s. (97 cents).

The makers work when they like and as long as they like between 6 a. m. and 6 p. m., and are expected to make about 5,000 per week of 6-by-6-by-1-inch quarries and the same in proportion for other sizes. Each maker should have one assistant, woman or boy, and sometimes a casual helper to pick up and stock quarries.

There are no organized-labor troubles, but a manufacturer informs me that "each man goes on the drink when he feels like it," and that "no man is considered any good unless he does this occasionally."

All quarries are made by the plastic process (Bach). Hand presses are always used. Quarries are always made by hand and are not cut off from pugs.

Quarries may be taken as graded according to the amount of finish and fineness of surface with which they are prepared, as "double crown," "crown," "best pressed," and "ordinary pressed;" while they are sorted according to quality as "firsts," "seconds," "brindled," and "refuse." The refuse is either broken up or sold to small dealers who come around.

The marl is ground between rollers, then soaked with water, and passed through rollers and a pug mill, whence it is taken to the makers.

Superior quarries are faced with a "slip." This "slip" is prepared by passing a watery mixture of marl through fine sieves and then boiling and evaporating.

There are no sanitary or insurance laws prescribing the use of tile floors in kitchens, toilet rooms, etc., and the Government does not aid the development of the industry.

The site of the works including the marl hole may be either the freehold property of the manufacturer or leased by him from the owners at a rent representing the agricultural value of the surface plus a rent of usually £20 (\$97.33) per oven for ovens having a capacity of, say, 40,000 6-by-6-by-1-inch quarries.

The preparation of the marl is either done by day wage or is contracted for by the manufacturer, the latter finding engine power, machinery, and tools. The manufacture from that point is contracted for by a "fireman," who finds makers (subject to the approval of the manufacturer) and is paid per thousand quarries "goods on the bank"—*i. e.*, ready for market. The wages of the makers and the fireman's assistants are found weekly by the manufacturer and debited to the fireman, who is credited with the value of the contents of the ovens at the rates before mentioned, for making and firing. An allowance on account is made to him for filling and firing ovens as such operations proceed. The goods as they are drawn from ovens are sorted by a sorter employed direct by the manufacturer.

WM. HARRISON BRADLEY,
Consul.

TUNSTALL, *June 6, 1899.*

ITALY.

The production of art tiles and mosaics for floor and wall decoration is very limited in this district, in consequence of the small demand for the domestic article. In nearly all buildings of recent construction, embossed floor tiles are to be seen; but they are brought from northern provinces, especially from Savona, Cremona, and

Treviso. Some floors are also decorated in the Venetian-mosaic style.

Formerly, kitchens, toilet rooms, and baths were adorned with "Marseillaises"—i. e., glazed tiles, with ornaments, imported from Marseilles, France.

• At present, varnished cements are preferred for mural decorations of toilet rooms and baths, the floor decoration, however, being in Italian tiles—in which the red and white colors prevail—made up in cubes.

No sanitary laws prescribe the use of tiled floors in any of the buildings, and no special encouragement is given for the development and technical advancement of this industry. The Government is somewhat strict as to the construction of wells and the drainage of buildings, but not in other respects. Defective marble slabs, from one-half to 1 inch in thickness, are sometimes reduced to pieces of geometrical shape and used for flooring entrances and recesses; but the comparatively high cost and the fact that they absorb moisture give the preference to the glazed tiles produced in northern Italy.

Instead of embossed mosaics in wall decorations, embossed plasters, terra-cotta ornaments, and "Della Robbia" floral and fruitage wreaths, symmetrically placed, are sometimes used.

FACTORIES.

The manufacture of tiles in this district is in an experimental stage, but two firms will engage in the business if the present tests prove satisfactory.

Bricks are manufactured to a considerable amount, but the majority of the factories are of the most unpretentious sort, in order not to attract the attention of the tax collector and the rivalry of the larger concerns. The number of persons employed in the brick factories may be reckoned at 1,000. Of these, 500 are adults, 400 boys, and 100 females. The number of factories is eighteen, situated at Capraria, Figline, Impruneta, Incisa, Montelupo, Pistoia, Sicci, and Signa. With the exception of factories at the last three places, there are none of much importance.

The Societa Pistoiese, established in 1868 at Pistoia, runs two brick factories, where vases, tubes, and roofing tiles are also made. The output per annum is perhaps 5,000,000 pieces all told, valued at \$50,000. The entire product is sold in Italy. The workmen are employed eight months in the year, work being suspended in winter. There are employed at this factory about 500 laborers, of whom 100 are boys. There are three Hoffman kilns in these factories, and fifteen presses.

Near Signa, there is a factory where bricks are made for the flooring of upper stories of buildings. They are hollow and of light weight. This factory has been in existence ten years and employs 100 workmen at 50 cents a day per man.

At Sicci, on the railway to Rome, there are the factories of a well-organized company close by the depot, with a paid-up capital of \$300,000, where 200 workmen are employed—100 men, 75 boys, and 25 females. They are insured by the company against loss of life and enjoy the protection of a sick fund. The wages run from 20 to 30 cents for women and boys and 50 to 60 cents for men per working-day of ten to eleven hours. The Sicci factory is the most important of all in Tuscany, and has a branch at Scauci (Gaeta), whence selected tiles, bricks, tubes, and vases are shipped to the East.

The yearly output of the factories at Sicci is estimated at 12,000,000 pieces, of excellent quality. The shipping facilities are of the best, cars being always in readiness on the tracks, near the works, to transport the product to any part of Italy. In addition to other kilns, this company has two "Hoffmans." The price of selected bricks is \$5 per thousand free on board.

FREIGHTS.

Although the railways in Italy are owned by the Government, they are leased to corporations, which fix freight charges. The charges at present amount to 1.6 cents per ton per mile, and the charge is made for 8 tons to the carload for tiles and bricks. When hauled over 500 miles, the charge is five-tenths of a cent. There is a fixed Government tax of 23 cents per ton, without regard to distance.

FLORENTINE MOSAICS.

I avail myself of this opportunity to mention the mosaics, a specialty of Florence, used for personal ornaments and house decorations.

For centuries past, Florentine mosaics have been noted for their wonderful setting and artistic coloring. Many masterpieces have been copied in the most deft way and perpetuated in indestructible material. The colors never lose their brightness, and the stones do not decay. Of late years, great advances in this beautiful art have been made in the way of reproducing celebrated paintings, flowers, fruits, birds, animals, insects, etc., so that it is now one of the prominent industries of the city.

At the time when the capital of the Kingdom of Italy was in Florence, this art was in a most flourishing condition and very many mosaics were exported to foreign countries, including the United

States; but since 1880, there has been a gradual decrease in these exports, as will be seen by the following table:

Year.	Value.	Year.	Value.
1881-82	\$12,347.45	1890-91	\$4,302.14
1882-83	13,152.44	1891-92	6,000.03
1883-84	11,305.00	1892-93	3,041.76
1884-85	3,317.60	1893-94	640.00
1885-86	2,129.90	1894-95	4,316.86
1886-87	3,213.33	1895-96	3,660.00
1887-88	3,519.30	1896-97	3,779.00
1888-89	6,008.14	1897-98	1,427.00
1889-90	3,751.51		

The foundation or background of most Florentine mosaics is a hard, black stone, susceptible of high polish, similar to marble, which is found in Belgium and is known as "paragon" or fine stone. In this foundation the mosaic is placed; sometimes the background is onyx and sometimes Florentine slate, whence it derives its name in commerce and art.

Description of the different stones of which Florentine mosaic is composed.

Stones.	Country of origin.
Agate, several kinds.....	
Black marble, paragon.....	Belgium.
Brocatello, variegated, hard.....	Italy.
Bucchese or red chalcedony.....	Tuscany.
Chalcedony, white and yellow.....	Do.
Collombina (limestone).....	Italy.
Corallina	Do.
Green of the leaves (Verdi d' Arno).....	Tuscany.
Gubbio, variegated.....	Italy.
Jasper, several kinds.....	
Lapis lazuli.....	Russia.
Malachite	Do.
Mischio (mixed).....	Seravezza.
Nifride (stalactite).....	
Onyx	Mexico.
Porphyry	Egypt.
Porto Santa.....	Volterra.
Porto Venese.....	Riviera.
Serpentine.....	Tuscany.
Terra di paese (ocher).....	Do.

The Royal Gallery of Works in Hard Stones (Regia Galleria di lavori in pietre dure) is in reality a Government workshop for the production of original mosaics and imitations of antiques. It was founded in 1588 for the purpose of carrying on the works in the celebrated sepulchral chapel of the Medici, adjoining the church of San Lorenzo. On account of the overthrow of the Grand Duke in 1860, the work in the Medici chapel was discontinued, but was resumed in 1883, in accordance with a commission issued to the factory

by the new government to complete the undertaking. An appropriation was then made for the compensation of the hands in the factory, which allowed \$380 per annum to the foreman, \$340 to an assistant foreman, \$320 to workmen of the first class, and \$250 to those of the second class. Temporary laborers, stone sawyers, and mechanics were to be employed from time to time at a maximum wage of \$220 and a minimum of \$130 per annum. There were at first 50 hands employed, but at present there are but 24. The working hours are from 8 a. m. to 12 m. and from 1 to 4 p. m.

The floor of the chapel is octagonal in shape, and the dimensions are about 650 square meters, or 774.4 square yards. Of these, 150 square meters, or 179.4 square yards, are tessellated in mosaics. Within the last fifteen years, \$3,500,000 have been spent in the restoration of this chapel.

The average annual production of the royal works—referred to is only about \$10,000, of which but \$2,000 worth is sold to private individuals. The balance of the product is used in making repairs to public monuments where mosaics have been used.

The gallery of the royal works contains a superb collection of specimens of the hard stones of which the mosaics are made, and few artists or students passing through Florence fail to visit this exhibit.

The mosaic factories in Florence engaged in the production of jewelry and household ornaments employ at present 30 adults and 90 boys. There are ten manufacturers and dealers engaged in this industry. There is also a cooperative company (limited) composed of artisans; but, so far, the enterprise can hardly be called a success.

Draftsmen and foremen in mosaic works get \$1 per diem, workmen 60 cents, and boys from 10 to 20 cents for ten working hours.

Paper weights, frames, candlesticks, and clock cases are among the articles produced in mosaics; but table tops constitute the most important product.

With a few simple tools and stones cut in different sizes—to be had at a trifling cost—and some polishing powder, the maker of mosaics is prepared to work in his own home.

The names and addresses of the leading mosaic manufacturers of Florence appear in the following list:

Regia Officina pietre dure, 82 Via Alfani.

H. Bosi, 1 Via Tornabuoni.

P. Bazzanti, 12 Lungarno Corsini.

Giovanni Boncinelli, 2 Via por S. Maria.

Giovanni Scappini, 1 Via Tornabuoni.

Giovanni Ugolini, 11 Via Fossi.

EDWARD C. CRAMER,

FLORENCE, *April 7, 1899.*

Consul.

RUSSIA.

I have been making efforts to obtain answers to the questions propounded in Department circular dated January 25, 1899, respecting the manufacture of tiles and mosaics, but without avail. The only person who is said to be familiar with the subject refuses to answer my questions.

The only plants I can hear of are at Moscow. There is one in Finland, but I could not learn in what part it is located. None make any considerable amount of floor tile, being largely confined to the manufacture of glazed tile that is used in what are called earthenware stores.

There is a Government factory at Peterhof, the Emperor's summer home, where the best class of artistic mosaics are made. I do not believe better work is done anywhere. No work is sold.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, *June 16, 1899.*

SWITZERLAND.

Upon careful examination, I wish to state that this industry does not exist in this consular district, as no clay or other material necessary to the manufacture of tiles and mosaics is found in this country.

In St. Gall and surrounding towns, not much tiling or mosaic is used. What is employed is imported from Germany, Austria, Belgium, and a small quantity from England. A large proportion of the importation is from Germany.

There are no sanitary or insurance laws prescribing the use of tile floors in any buildings.

JAMES T. DuBOIS,
Consul-General.

ST. GALL, *March 14, 1899.*

BRITISH INDIA.

I have been able to discover, in this part of India, but one firm—Messrs. Burn & Co.—which manufactures tiles and mosaics for decorative purposes. The managers have two manufactories—one at Raneeunge, the other at Jubbulpore—where they manufacture pottery and tiles for sanitary purposes and covering buildings and

mosaics for mural decorations and pavements, but of an inferior quality.

I wrote them for such information as they were willing to give relative to the manufacture, but they say in reply, "We do not see our way clear to give the information asked for, nor do we know to whom to refer you for it."

The information was refused, of course, for the reason that it was evidently wanted for competitive manufacture.

The best tiles and mosaics are imported from England and have been used in considerable quantities for decorating the palaces of the rajahs and other wealthy natives, who vie with each other in the magnificence of their dwellings; also for some of the Government buildings. In some of the palaces, the floors, wainscoting, and ceilings are of tiles and mosaics; but the number of these buildings is not large, though it is probable more would be used were a stock kept here from which to select, as it often takes many months after the order is given to get them from England, and for this reason marble is used instead.

Below, I give some items showing the cost of mosaic pavements, including packing and railway transportation, taken from Messrs. Burn & Co.'s catalogue:

Tessellated pavement, body pattern.....	per square foot...	\$0. 16
Borders.....	per running foot...	. 16
Boxing, packing, and delivery to railway station.....	per 100 feet...	1. 28
Freight, per 100 feet, superficial, 82½ pounds.....	per 100 miles...	. 84

The above will indicate the cost of mosaic pavement here of an inferior quality and the comparative cost of tiles.

I regret that I am unable to get the necessary information to answer the questions in detail, but believe if our manufacturers would send an expert here to see the kinds of tiles and mosaics required, with samples, and would keep a stock on hand, quite a business would result.

R. F. PATTERSON,
Consul-General.

CALCUTTA, *March 28, 1899.*

JAPAN.

I have made inquiry as to the manufacture of floor and wall tiles in Japan, and am informed that these articles are produced here only in small quantities and solely upon orders for foreign markets, there being no domestic demand. The greater part of such orders has been for imitations of foreign designs, and it is stated that the Japanese potters have not found them profitable; the business is

now of insignificant proportions, although at one time as many as nine different establishments were engaged in it. The leading Japanese concern is located in Tokyo and is known by the name of Asahiyaki. I am informed it has received considerable direct assistance from the Japanese Government.

YOKOHAMA, *May 22, 1899.*

JOHN F. GOWEY,
Consul-General.

PERSIA.

The student of the arts, industries, and handicrafts of Persia receives but little assistance from the writers of either ancient or modern times. Poets, historians, philosophers, romancists of classic fame never condescend to analyze or interpret for posterity the avocations or the labors of the people among whom they lived. They were nevertheless the slaves of the situation, and had to mold their style and subjects so as to procure the favor and patronage of kings. To magnify events and intensify their meaning and effect in all the vivid hues of oriental coloring was the aim and business of the historian. His work has one recommendation—it is drawn to a scale. Everything is colossal, and to those not acquainted with his methods he appears to be impartial. Success or disaster, victory or defeat, prosperity or calamity, feasting or mourning—all receive the same treatment. Nothing could be small, nothing insignificant; his imagination, not his judgment, secured the favor and earned the reward. It is not, therefore, surprising to find him silent on the minor yet practical realities of the national life.

To trace the course of any industry in Persia which has survived the ravages of time is an interesting study. The industrial activity, though unnoticed by the records, is very closely interwoven with the texture of the national life, and in its pictorial aspects reflects its peculiar and dominating characteristics. It will, moreover, be found that where the skill of the artist has been united to the handicraft of the artisan the product has taken firm hold and has remained, under various forms and degrees of excellence, through every national, dynastic, and religious change. This proposition receives its most practical illustration and proof in the industry associated with the manufacture of porcelain, glazed, and encaustic tiles. Their invention lies far back in the twilight of history. They have been excavated in their almost original luster from the buried cities and entombed palaces of Babylonia, Persia, and Media, and are now the treasures of the museums of the West.

Tiles in their pictorial aspect have had considerable variety of

form and representation. In one instance, a tile contains a complete picture, while in another it may form a small section of a large composition.

ANCIENT TILES.

In the earlier stages of the art, the surface of the tiles appears to have been generally smooth and flat, while in later developments raised or embossed figures have entered largely into the design, especially for mural and frieze ornamentation. The æsthetic idea was generally modified to represent the character, the predilections, and the policy of the reigning monarch of the period. Warriors in complete armor, hunting, feasting, and religious devotions diversified the illustrative scenes. The artistic perceptions, though not always correct, have been generally free from the blemishes and luxurious depravity which have defaced other domains of art.

In the superiority of materials, in the delicacy of design, in the beauty of coloring and perfection of finish, nothing has, perhaps, equaled the work of the thirteenth, fourteenth, and fifteenth centuries of the Christian era. The tiles produced during this period were generally devoted to the decoration of mosques, holy places, shrines, and tombs of saints of the Mohammedan faith.

The center is composed of flowers or geometrical figures and the border consists of written passages from the Koran. A golden tint pervades the whole surface, sometimes united with a shade of blue, giving to the design a peculiar softness and charm. The materials and the method of producing this characteristic are now unknown, and hitherto no attempt to reproduce it has been successful, either in Persia or Europe. One tile manufacturer in Teheran, after experimenting for many years, seems to be on the path of success.

How this beautiful art was lost to the world is a question often asked, but without eliciting any satisfactory answer. It is, however, generally known that certain departments of art workmanship were in former times confined to small communities and not infrequently to the members and branches of one family, who looked upon themselves as close guilds and the possessors of special secrets, rights, and privileges. This gave them profitable advantages, but it exposed their craft to absolute extinction. It is therefore not unreasonable to conclude that either by famine, pestilence, the sword, or exile, the art and the artist perished forever. Twenty years ago, examples of this work could be bought for a trifling sum, but at the present time the finer specimens command ridiculously high prices.

It should be noted that vessels of household use, especially vases, ewers, basins, and dishes, were made of the same materials with the same glow and tint of coloring; but, being more delicate in texture and more fragile in form, very few examples remain.

MODERN TILES.

At the present time, two classes of tiles are made—the plain and the pictorial; the former in a variety of shades for flooring, and the latter chiefly for mural decorations. As a general rule, tiled floors consist of alternate white and colored rows, though some are laid in composite designs. The masonry of the gates of Teheran, the domes of mosques and shrines, and some public buildings are overlaid with variegated tiles in arabesque or mosaic designs. The effect is graceful, though decidedly oriental. The thickness of the tile varies from two-thirds of an inch to 3 inches. Those used on the outside of buildings are the thickest.

The material used in the composition of the groundwork consists of nine-tenths of pulverized quartz to one-tenth of strongly adhesive clay, and the glazing is compounded of flint and potash. All the minerals used in the manufacture of tiles and porcelain for groundwork, glazing, and coloring are found in the country.

With our preconceived notions of complicated manufacturing processes, it is difficult to imagine that the most beautiful carpets in the world are the product of the gypsy's tent, or that the glowing surface of the ornamental tile can have received its shape, color, and hardening in a mud hut, with no more machinery than a pestle and mortar and an ordinary knife. In such surroundings, organized-labor troubles have not much scope for operation.

CONDITIONS OF INDUSTRY.

No sanitary laws exist for the regulation of workshops, or even a general inspection of the conditions of living and habitation. In this respect every man is a law to himself.

No insurance society has so far been organized in Persia, either for life or property, though some English companies insure goods in transit in the interior, and a Dutch agency is trying to introduce the system of life insurance.

The social conditions and religious prejudices and restrictions prohibit to a very large extent the employment of female labor in factories or workshops. Carpet weaving seems to be the only industry in which their services are utilized.

The Persian Government gives no encouragement and lends no aid to native industries beyond being a purchaser of the goods produced. A little help in reviving old arts and supporting modern ones would benefit a large section of the population and give an impetus to the exercise of artistic and mechanical skill.

The tile will continue to be used as a covering and ornament for the domes, cupolas, and minarets, both inside and outside of mosques and other sacred buildings; but for houses and public buildings, it

seems to be gradually falling out of the taste and fashion of the times and giving way to simpler and cheaper materials. For durability it is superior to anything now in use, but the cement by which it is attached to the masonry lacks the proper adhesive qualities, and it often separates and falls away.

The tile business of Persia is very humble and simple. The most extensive is carried on, from pulverizing the quartz to putting the finished article on the market, by the proprietor, his son, and four helpers. Under such industrial conditions, not much room is left for the contractor and subcontractor; and yet I believe such divisions are not unusual.

It is difficult to give an estimate of the prices of tiles, for the variety of shape, ornament, and size seem to almost equal the number of tiles produced, and each has a different price. But as a formula to include all, it may be stated that floors, dados, borders, window seats, etc., can be fitted up from \$3 to \$15 per square yard.

Hitherto, the foreign demand for this product has been comparatively small. Orders have been executed for London and Paris. The heavy cost of transport is the chief hindrance to the export trade. So long as the camel, the mule, and the ass are the only freight vehicles, Persian industries will labor under great disadvantages. The rates for carriage are for tiles the same as for every species of merchandise, viz, from 8 to 12 cents a ton per mile, which means from Teheran to Bushire, exclusive of customs and commission, \$80.

The free and untrammelled adoption by Persia of improved methods of transport and communication and the development of the resources of the country are being greatly impeded by monopolies, concessions, and conventions, which, instead of infusing new life into native industries and utilizing natural products so as to give increased employment to the population, either cause industries to lapse into a state of decrepitude or inanity or are used as instruments to foster the processes of decay.

When Persia can shake herself free from these shackles of foreign drags and interference and give freedom, instruction, and help to native enterprise, then, and not till then, may she hope to take her place as one of the producing nations of the world.

The principal ornamental-tile makers of Teheran may be addressed as follows:

Ustad Ali Mohammad, Hassanabad.

Seyd Habib, Kāshi-paz, Khiaban-i-Ala-ed-Dowlah.

Mosaic work, as understood among us, does not exist in Persia.

JOHN TYLER,

TEHERAN, May 8, 1899.

Vice-Consul-General, in Charge.

HIGH-ART REPRODUCTIONS FOR AMERICA.

Consul-General Mason, of Berlin, under date of September 1, 1899, sends a report giving a description of an association, organized in Berlin some years ago, for the purpose of applying a new process of colored photogravure to the reproduction of the masterpieces in the royal galleries of Europe. The educational character of the work, Mr. Mason thinks, makes it worthy of notice. The report reads:

It will doubtless interest the friends of æsthetic culture in America to know that a society in Berlin, known as the "Vereinigung der Kunstfreunde für die amtlichen Publicationen der Königlichen National Gallerie" (Union of Friends of Art for the Official Publication of the Royal National Galleries), which is organized under a charter issued by the Prussian Ministry of Worship and Education, is about to send a delegate to our country for the purpose of establishing a branch office in the United States. As its name implies, the society is the vehicle for distributing among the educational and religious institutions of Germany, and the people in general, facsimile copies in colors of the great masterpieces and famous paintings in the royal galleries in Europe, thus planting the seeds of art education in the minds of the rising generation, and fostering among the intelligent classes a cultivated taste for wholesome art.

As particular stress has been laid by the most eminent authorities in American art education upon the fact that, much as our own art culture has improved within the last twenty years, the improvement in refined æsthetic taste has not kept pace with it, unless in exceptional individuals, and that it has been of necessity limited more or less to the wealthier classes, the establishment of a branch of the Art Patron's Society of the Royal National Galleries in the United States seems to deserve the earnest attention of our art educators at home.

The popularity which the society enjoys here and the success which has crowned its efforts must be accredited to the artistic standard of its productions, which rise far above the meaningless black-and-white prints, cheap chromos, photogravures, etc., that flood the German art market. This superiority is due, in the main, to the peculiar process owned and employed by the society in its reproductions, a process which, in due course, it intends to transplant to the United States. It differs in its method from any heretofore employed, inasmuch as it enables the reproducing artists not only to create true facsimiles of the original in every outline, by

means of photography and steel etching, but also to produce the depth of coloring and the peculiarities of manner of each master by a special employment of the colors called heliotint, thus reproducing the characteristic handiwork of the artists.

The process, although an intricate and costly one, has not been patented; but strict secrecy is kept as to the manipulations of the plates in some of the stages through which they have to pass. After the original paintings have been photographed, for which purpose special cameras have been built and negative plates of particular sensitiveness are prepared, the photographic productions are transferred to steel plates, the surfaces of which, by some peculiar treatment, have been prepared to receive the impressions from the negatives.

The outline work is thus obtained from the steel with an exactitude and clearness never before known. In the meantime the colors, as true to the original painting in the distribution of light and shade as manipulation of the brushes of eminent artists can make them, have been reproduced on the photographic copy first obtained, and the complex "color tableau" thus created is transferred to as many lithographic stones as there are colors represented in the picture, from which impressions are taken on presses worked by hand, as it has been found that presses worked by machinery can not do the work with the minuteness and cleanliness necessary to effect perfect reproductions.

The methods employed by the society for the distribution of its productions among the educational and religious institutions of the country and the people at large are somewhat unique.

It obtained at the start a list of patrons, who, in consideration of certain annual contributions, caused the society to distribute a number of the works among the educational institutions of the country. This list of patrons gradually grew, headed by the Emperor and Empress of Germany, who are followed by many of the members of other royal and princely families in Europe, until it has reached an aggregate membership of more than sixteen thousand.

These patrons gradually introduced the society's productions into the homes of subaltern officers, teachers, civic employees, and people in the humbler walks of life, who, however, before becoming entitled to the privilege of receiving such art reproductions, had to sign the society's roll of membership and thus become active agents in the missionary work of spreading culture in art.

Keeping its educational tendencies continually in mind, the society has always exercised the greatest care in the choice of subjects for reproduction. It has made selections from the great classical and modern religious painters, Rafael, Murillo, Guido Reni, Paolo

Veronese being among the former, and Hoffmann, Plockhorst, Gerhardt, and others among the latter. It has also endeavored to foster the love of home and country by giving reproductions from famous masters which represent scenes from history, and it will adhere to a like policy in the conduct of its American branch. Each year, a number of subjects from the history of the United States, these subjects to be chosen by an American advisory board, will be selected for reproduction, the originals to be painted by American artists. (Leutze's famous canvas "Washington crossing the Delaware" is already on the stocks in the society's ateliers to open the American series.) These American historical paintings will be placed on exhibition both in the United States and in Europe, and gold medals will be awarded by the society to those American artists whose works are chosen for reproduction. American landscapes and marine views will also be included in this line, and it is proposed, in time, to erect a suitable building in one of the principal cities of the Union, which is to serve the purposes of an artistic workshop for the American branch of the society.

NEW TREATMENT FOR TUBERCULOSIS.

Consul Atwell, of Roubaix, under date of October 7, 1899, says:

In my report of June 26, 1899,* I spoke of Dr. Mendel's treatment of tubercular diseases, which called forth so many inquiries that Dr. Mendel has forwarded to this consulate an article on the subject contributed by him on September 9, 1899, to the *Journal des Praticiens*. I inclose herewith translation of the article, which contains specific information with regard to his treatment, as called for in Department instructions of August 10, 1899.†

The article reads:

TREATMENT OF BRONCHIAL AND PULMONARY DISEASES AND PARTICULARLY OF TUBERCULOSIS BY INJECTION OF ESSENTIAL OILS INTO THE TRACHEAL DUCT.

The introduction of medicine into the tracheal duct was not practiced, we believe, prior to 1883, when Bergeon lectured before the congress for the advancement of science on injections of calming matter into the tracheal duct by means of the Pravaz syringe. This physician made twenty-five injections in thirty-five days with most satisfactory results. Although the idea was good, the manner of injecting through incisions in the skin of the neck was not acceptable, and the treatment found little favor.

In 1888, Beehag conceived the idea of injecting a few drops of oil of peppermint

* See CONSULAR REPORTS No. 228 (September, 1899), p. 177.

† Sent at the request of a resident of Texas, to whom Advance Sheets of this report have been transmitted.

into the larynx. This injection was made by the aid of a mirror; the liquid found its way into the tracheal duct and produced a sedative effect. The problem of tracheal injections through the mouth was solved. The treatment was then followed systematically by Drs. Dor, Garel, Botey, Jarrige, and others, who used oil of creosote and oil of peppermint in cases of pulmonary tuberculosis.

The results were encouraging, but it seems that oil of creosote injected into the tracheal duct has no greater effect than when injected under the skin. It is for this reason that I have abandoned the injection of oil of creosote and have carried my experiments into a comparatively new field; I allude to essential oils.

The Freudeureich experiment is known. This physician placed germs of tuberculosis in glass jars containing twenty drops of essence. He then corked the jars with rubber stoppers and studied them for a period of twenty days. He observed that the germs of tuberculosis were arrested in process of growth or even destroyed by essence of wintergreen, rosemary, peppermint, marjoram, thyme, geranium, lavender, lingwort, and eucalyptus.

The problem was to choose between these ten oils. I selected oil of thyme, whose antiseptic value is equal to that of carbolic acid; oil of cinnamon, which is considered tonic and stimulating; and oil of eucalyptus, which seems to have a special action on the mucus of the bronchial and pulmonary organs.

After experimenting upon dogs, I decided upon the following solution:

Essence of thyme	grams...	5
Essence of eucalyptus.....	do.....	5
Essence of cinnamon.....	do	5
Sterilized olive oil.....	cubic centimeters...	100
To this solution may be added iodoform	grams...	5
Bromoform	do.....	0.05

In treating certain cases, this proportion may be doubled or even trebled.

The tracheal injection is practiced daily, and for this purpose I use a long, curved syringe invented by Collin. The syringe contains 3 cubic centimeters of the solution. I empty it three or four times consecutively into the tracheal duct. The patient, who feels the solution trickling into his lungs, experiences an agreeable sensation of warmth and does not cough.

In my early experiments I operated with a throat mirror, but I am now able to do without this aid. The patient holds his tongue outside of his mouth between thumb and finger by means of a napkin. The tube is then inserted behind the tongue and the syringe held in a vertical position and the piston pressed. If the whole solution is successfully injected into the tracheal duct, the patient experiences the feeling of warmth spoken of above. If, on the contrary, a portion has been spilled on the epiglottis and in the mouth of the larynx, a certain quantity returns to the mouth and he spits it out; but I affirm that he does not cough.

This treatment is simple and inoffensive.

I will now state the results that I have obtained. I have up to the present time treated twenty-seven cases of tuberculosis, of which eighteen were in the first stage of the disease, four in the second, and three in the third; and in each case I have obtained some result.

Tuberculosis in the first degree is known by the following symptoms: The patient coughs and loses flesh during several months; strength fails and the appetite is irregular or fails altogether; the cough is often frequent and prevents sleep; expectoration is more or less abundant, of yellowish or greenish hue, and does not necessarily contain bacilli.

Stethoscopic examination reveals a deadening of the sound on one or both sides

of the upper lungs; auscultation reveals slower or panting respiration, prolonged or fitful exhalation, and a slight cracking sound.

With this class of patients, after a treatment varying in period from eight days to a month, I have succeeded in relieving the cough and expectoration and even stopping them altogether. Strength, sleep, and appetite have also returned. The treatment is slower in some cases than others, but it is always effective.

At the end of the treatment, I have sometimes noted the disappearance of the cracking sound; but in general the stethoscopic characteristics remain unchanged.

These eighteen patients in the first stage of tuberculosis have not been treated by me for three months, and continue in good condition.

Tuberculosis in the second degree (period of softening of the lung tissues).—Three out of four patients have found relief, though in a lesser degree than my patients in the first stage of the disease. I have not been able to stop the cough and expectoration completely, though I have relieved them greatly, and appetite and strength have returned.

The stethoscopic characteristics have also been modified. The rattling has decreased at least one-half or three-fourths, and the aching in the throat has disappeared.

The fourth patient, a girl of 12, first experienced much benefit, but at the end of three weeks the malady reappeared in full force. She is still under treatment.

Tuberculosis in the third degree.—I have treated three patients of this class. The first, a woman of 30 years, with a cavity in upper left lung, general health bad, cough and expectoration incessant, no appetite, very weak. The injections rapidly changed the condition of the patient. At the end of two weeks the cavity had dried and the cough and expectoration had decreased two-thirds. She has good appetite now, no longer vomits when seized with a fit of coughing, sleeps well, and thinks herself cured.

The second patient is still under treatment, which has lasted three weeks; appetite and strength have returned, cough and expectoration have diminished one-half.

The third patient, 29 years of age, was confined to his bed and in a most precarious condition. Large cavity in upper right lung, high fever, no appetite, bad diarrhea, extreme emaciation.

The treatment revived him, however; after a few days the appetite returned, diarrhea ceased, cough diminished a little, expectoration was easier and unaccompanied by vomiting. Nevertheless, the disease continued and after a month the patient died.

This, then, is a statement of the result obtained thus far through the treatment by injection of essential oils. It is rapid and usually effective.

In order not to lengthen this article, I will simply mention that it has an excellent effect in the treatment of simple affections of the bronchial organs, etc.

It now remains for me to explain the action of this treatment. The medicated oil, injected into the orifice of the tracheal duct, descends slowly, bathing the walls. It thus penetrates the upper bronchial tubes, creating a large surface of evaporation at the point where the bronchial tubes branch out. Before the oil is absorbed the air entering the lungs is saturated with volatile odors that destroy the bacteria. There is intense inhalation in the center of the respiratory organs, which is far more effective than any ordinary inhalation. The oil and medicine are thus absorbed by the lungs, diffused through the system, and finally carried off through the lungs and urine.

We thus obtain the disinfection of the mucus of the lungs by the aid of the air, which acts as a vehicle for the medicine. This explains the decrease of cough and expectoration, the drying of the tubes, and general better health, by reason of the fact that the lungs cease to absorb the poisonous gases within them. If the

characteristics of the disease in the early stage, such as shortness of breath and panting exhalation, do not lessen, it is because the lesions are situated beyond the reach of the channels of respiration.

In certain cases where the tracheal injection could not be performed daily, we have substituted a medicated injection composed of a glass of milk, the yolk of an egg, and from ten drops to one or two coffee-spoonfuls of the solution mentioned above. We have had excellent results from this treatment. The volatile oils pass off largely through the lungs and perfume the breath of the patient for several hours.

THE MALARIA MISSION.

Consul Hill sends from Amsterdam, September 30, 1899, newspaper clippings in regard to the mission sent to Sierra Leone by the Liverpool School of Tropical Diseases* to investigate the causes of malaria. The results of the mission seem to be the discovery that local species of *Anopheles* (mosquitoes) carry malaria; that these species breed in a few stagnant puddles. The practical results, adds the article, depend on the Government and medical profession. The grubs can be killed in a few hours with kerosene oil; but operations must be continued systematically, and some of the more dangerous puddles must be drained. The physicians composing the mission have concluded that the truly malarial fever is caused solely by the mosquito—probably entirely by the *Anopheles* species. Most of the fever can be got rid of at almost no cost, except of a little energy on the part of the local authorities.

The London Times, of September 28, 1899, comments on the above, in part, as follows:

Mosquitoes, entomologically, are only gnats, or culicidæ, of which there are about one hundred and fifty known species, *Anopheles* being one genus out of several; and the particular *Anopheles* which has been proved guilty of fever carrying is a large variety, distinguished by having four spots on its wings. So far, at least, no conviction has been obtained against any other member of the gnat family, but it would be somewhat hazardous to extend to them the principles of English jurisprudence, and to regard them as innocent until they have been proved guilty. For the common English gnat, *Culex pipiens*, there is probably sufficient exculpatory evidence of a negative kind; but it is clear that, in malarious regions, all blood-sucking insects must be at least suspected. Nevertheless, it must be borne in mind that the inquiry, so far, has reached only an early stage, and that not only may there be tropical fevers which are not due to the ague parasite, but there may be also harmless gnats in infected districts. The most encouraging part of Dr. Ross's letter is that in which he expresses his belief that the destruction of the peccant insects in the puddles in which they spend their larval stage can be effected without excessive difficulty, and, in a large measure, by an agent so little dangerous as kerosene. If this expectation should be realized, the effect will be to open

*See CONSULAR REPORTS No. 226 (July, 1899), p. 500.

up immense regions of African and other countries to European colonization and to take away one of the great scourges of the world. It seems highly probable that the destructive effect of the tsetse fly on horses may be due to some similar parasite conveyed by bites, and that the infinitely little, as in so many other recent instances, will be found to play a most important part in relation to the history and destinies of mankind.

CITIES OF PARAGUAY.

I have recently traveled through this consular district to investigate commercial conditions, and I submit the results of my observations.

I started from Asuncion for the interior by rail, and the first town of commercial significance was Ipacarai, or Tacuaral, about 25 miles, or one hour and twenty-six minutes, from Asuncion.

IPACARAI.

This town was founded in 1887. Its population is 2,500. It is much like our Southern country towns, the stores containing a little of everything. One difference, however, is that all houses are built of brick and covered with tiles, or tejas. This is the mode of construction in all the cities of Paraguay. Where the houses are not brick, they are of mud and have thatched roofs.

This town commands a large country trade, being in communication with mountain towns, such as Caragatay, from which wood is exported, also tobacco, skins, corn, sugar cane, and wool; Altos, which exports cocoanuts from which all the soap used here is made; Piribevuy, the center of a tobacco region; and a number of others. Produce is brought down by ox carts.

A narrow-gauge railroad of about 75 or 100 miles in this section would pay. Many products never get to the market, as it is easier to let them rot than to pay the present heavy freight rates. The carts charge from 10 cents up per 25 pounds, according to distance. The value of traffic is about \$200 gold per day.

There are some twenty-four business houses, four brick kilns, a tannery, two schools, a church in process of construction, a post-office, a railway station, and a telegraph office.

PARAGUARI.

The next city I visited was Paraguari, one of the most flourishing in the Republic. It has about 10,000 inhabitants and is one of the oldest cities in Paraguay, being founded in 1775 by Governor Augustin Fernando de Pinado.

Paraguari is the headquarters for all towns in this section. There

is a monthly traffic here of 300 ox carts, bringing from the Misiones and wayside towns such products as cocoa, peanuts, eggs, corn, pease, sugar cane, mandioca, pineapples, watermelons, onions, garlic, sweet potatoes; forest fruits peculiar to the country—guayaba, guavira, ybapomo, guavira-mi, ybapuru, guaviyu, ybaporoity, nandypa (used for making oils), aguai, pacuri, and ybajai, all of which are employed for making sweets—lemons, limes, grapes of all kinds, figs, peaches, etc.; bird feathers, skins, etc. In this section are cattle, deer, goats, sheep, horses, and hogs. Foxes, monkeys, tigers (small), South American lions, and wild cats are found, and other animals peculiar to the country; the carpincho (a kind of hog), the lobo (beaver), the mborevi (tapir), the cuati, the eira, the anguya, and the caraya (a big monkey), as well as birds, ostriches, pigeons, ducks, turkeys, peafowl, parrots, cranes, humming birds, wild ducks; the chajá, the ipacáa and the urráca, which is said to talk if its tongue is cut; etc.

From Paraguari to the Misiones a small narrow-gauge railroad could be built with profit.

In Paraguari there are two large bakeries, one tannery, three shoe stores, one harness store, one jewelry store, three tailor shops, three barber shops, three carpenter shops, four hotels, twenty-six stores and groceries, one hardware store, two factories or distilleries of caña, two billiard halls, one drug store, and two importing houses—Juan Delmas and Nardi é Isasi. One of the industries is the manufacture of earthen jars for holding water. Here are found some of the finest stones of the country.

Paraguari is a most promising town, the gateway to a vast territory, and is a good market for foreign goods. All classes of articles used for domestic purposes would find a sale here. In cotton goods (of cheap quality), calicoes, etc., there is a large trade, and the people from rich sections in the vicinity are prepared to pay for all they buy.

Permit me to say here that Americans attach too little importance to the trade of these countries in South America. This will be our best field for commercial operations in the future, and we ought to commence now.

Six miles from Paraguari is a stream called "Mbaey," and 3 miles from the Mbaey is another larger and more powerful current, called "Caafiabé." These two streams are capable of producing enough horsepower for many manufacturing enterprises.

CARAPEGUA.

Six miles from the Caafiabé is the large and progressive town of Carapegua, founded in 1725. It has a population of 13,000; about 30,000 head of cattle; besides horses, sheep, goats, etc., in great

numbers. This section cultivates cotton, tobacco, corn, sugar cane, and mandioca; starch, rum from sugar cane, and honey are produced. There are tile and brick factories; coarse woollen cloth, handspun cotton textiles, hammocks, and ñanduti (lace) are made. It has two schools, a church, many modern edifices and business houses, a post-office, and a subdepartment of the Agricultural Bank.

TABAPY.

Tabapy is a town of 5,000 inhabitants, about 8 miles from Carapegua. It has 15,000 head of horned cattle, a number of horses, goats, sheep, and pigs; tobacco, sugar cane, mandioca, beans, oranges, bananas, peanuts, rice, hay, skins of all kinds, honey, and starch are produced, and there are about 9 miles of cocoa plantations.

QUINDI, CAAPUCÚ, AND VILLA FLORIDA.

On the same road are Quindi, of about 7,000 people, with 24,000 head of horned cattle; Caapucú, with 4,500 people and 50,000 head of cattle, as well as other stock; and Villa Florida.

From Paraguarí I went by train to Villa Rica.

VILLA RICA.

This city has about 25,000 inhabitants. It is situated on a high hill, and the surrounding section is more devoted to agricultural purposes than to cattle raising. Tobacco is grown in abundance, and is pronounced among the best in South America. Fine cigars, called "papaluca," are exported. There is a large tobacco-drying establishment. Sugar cane, rice, corn, mandioca, pease, yerba mate, woods of all classes, textile plants, oranges (very sweet), cocoa, etc., are found in abundance around Villa Rica. There are cigar factories, orange-wine factories, brick and tile factories, distilleries of rum, sawmills, etc.

Villa Rica is 90 miles from Asunción. One of the national colleges is situated here, and there are public schools, in which the sexes are separated, according to the custom of the country. It has a church, many modern edifices, and commercial houses. The Agricultural Bank has an agency here, and the town is open to telegraphic communication with all the outside world.

One thing to be noted in the Villa Rica section is that oranges ripen late in the season, because of the elevation. These find a market after the regular crop is exhausted, and thus command a better price.

The water in Villa Rica is very pure and good.

SAN PEDRO.

San Pedro, 86 miles from Asuncion, exports annually more than 7,500,000 pounds of yerba mate; coffee, rice, sugar cane, and corn are produced in this district. The town has two schools, one church, and a population of about 8,000. Here are found the sweetest oranges in Paraguay. Millions rot on the ground for lack of means of transportation. A narrow-gauge railroad, 20 miles in length, would put the rich interior into connection with the river.

VILLETA.

Villeta is about 16 miles down the river from Asuncion. With its surroundings, it has about 8,000 inhabitants. In the vicinity are some 40,000 head of horned cattle, as well as horses, mules, sheep, and goats. Tobacco, hay, sugar cane, pease, mandioca, cocoanuts, and starch are produced in abundance. Stones for building are found. This is one of the largest exporting towns for oranges and tomatoes on the River Paraguay. Many millions of oranges go hence to Buenos Ayres and other points south.

The town is attractively laid out. Wharves are constructed especially for the exportation of oranges and tomatoes. There are also rum distilleries.

CONCEPCION.

The principal city in the northern part of Paraguay is Concepcion, with a population, including its suburbs, of 15,000. It is 125 miles from Asuncion, and about 345 feet above sea level.

Paraguay is perfectly free from fevers of all kinds, except such as enter from without. Concepcion has a municipal board, military commander, chief of police, and justice of the peace; a national college, two public schools, a custom-house, a good harbor, various beautiful modern edifices, a large market, two banks, a subdepartment of the Agricultural Bank, a post-office, street railway, telephone company, and five hotels.

This is the point whence most of the yerba mate is exported, and importation is made direct from Europe and other countries. Here is located the importing house of Quevedo & Co., which has nearly all the trade of the northern part of Paraguay.

Concepcion offers 90 by 150 feet of city land free to anyone who will build a house of 2 rooms 12 by 12 feet, and at least 14 feet high; but the land is given on the condition that the house be built within one year after date of grant. The only cost attached is about \$1.50 gold to pay for title papers.

The removal of the Brazilian yerba-mate company into Brazil has seriously affected the business activity of this city. The land in

the vicinity is adapted to raising cattle, and some of the finest are produced here.

Across the river is the English missionary station, the territory of which extends many miles into the interior among the Indians.

ROSARIO.

Rosario, on the road to Concepcion, is the principal opening to the yerba-mate region. A railroad to the yerba fields could be built here that would pay a good dividend.

I returned from Concepcion to Asuncion to make a trip to Villa del Pilar, the most important city in the south of Paraguay.

VILLA DEL PILAR.

This city has a most promising future. Including its suburbs, it has a population of 10,000. This region exports oranges, vegetables, skins, and woods. There are only about 20,000 head of horned cattle here. It is about 104 miles from Asuncion. The city has a municipal board, military commander, justice of the peace, custom-house, port captain, national college, many public and private schools, subdepartment of the Agricultural Bank, and telegraph and post offices. Streets are nicely laid out. Orange trees grow throughout the city.

Villa del Pilar offers conditions as to free grants of land for building of houses similar to those offered by Concepcion. The house must be built within a year from the grant. Building is very cheap here. A house conforming to the requirements of the law, made of brick, would cost from \$200 to \$300 gold.

An American, Albert Jones, has entered the orange and vegetable business, and is doing exceedingly well. He will be glad to answer any letters that may be addressed him at Villa del Pilar. Much of the following information was gathered from him.

Villa del Pilar is one of the largest orange-exporting towns in the Republic, and has a fine harbor on the River Paraguay. Oranges last year brought from \$35 to \$100 in Paraguayan money (equaling about \$5 to \$15 gold) per cart load. There are in a cart about 5,000 oranges; each orange tree produces from 5,000 to 10,000 oranges, and with 1,000 trees good profits can be realized. The lowest price was due to the glut of the Buenos Ayres market. The freight is about \$3.50 a ton to Buenos Ayres and \$2.50 a ton from Buenos Ayres to Liverpool.

Mr. Jones informs me that he shipped a load of Paraguayan oranges to the London markets; that they arrived in good condition after having been in transit forty-five days, owing to his having lost steamer connection in Buenos Ayres (the usual time being from twenty-six to thirty days); and that they brought a good price.

Mandarins grow well. They can be planted 6 yards apart; oranges must be 10 yards apart.

The orange trees here suffer no damage from the cold. A man can start a good orange plantation with \$1,500 gold and in eight years after planting the seeds his income should be \$4,000 or \$5,000 gold a year. During the first eight years, he can raise vegetables, thus making a living till the oranges are ready to harvest. The season for oranges is June, July, and August. There is not so much labor involved as in raising cotton.

A plant for making boxes for orange packing would be a good investment. The timber of which the boxes are made can be gotten for very little more than the expense of collecting it. The thing necessary here is to pack the oranges in boxes and to do away with the destructive mode of piling them one on the other, by which method, when the orange boat arrives at Buenos Ayres, the ones beneath are crushed.

Another paying industry would be an establishment for making marmalade. There are thousands and thousands of oranges lying on the ground which could be obtained for an insignificant sum, probably amounting to no more than cost of taking them away.

Sweet potatoes grow with little care the whole year, though not so well in July and August. Many are exported. Irish potatoes do not thrive so well. Corn produces about 40 bushels to the acre. Ordinary pease were sold last year for about \$10 gold per basket holding $1\frac{1}{2}$ bushels; their usual price, however, is \$2.50 a basket. Squashes were sold in March for \$2.50 gold per basket holding 25 or 30. Tomatoes sell for about \$1.50 to \$2.50 gold per basket. Watermelons reach 56 pounds in weight and are ready one month before the Buenos Ayres melons are ripe (in December). In order, however, to have good watermelons, new seeds ought to be gotten from the United States every two years. Muskmelons and cantaloupes are also much in demand. Strawberries grow well and bring a high price in Buenos Ayres; gooseberries also. Florida peaches would do well—in fact, any thing that grows well in Florida will thrive here.

The Argentine Republic imposes no duty on vegetables, etc. Asparagus and cauliflower bring 40 and 50 cents gold per pound in Montevideo and Buenos Ayres. Cherries, plums, and apricots would also grow well and profitably. Burr clover grows well the whole year round. Milk is exceedingly good in Villa del Pilar, because the grass is of a superior quality. Eggs bring a very good price, as well as chickens. All the eggs which can be gotten are bought by the steamship companies.

Everybody drinks wine here, and Mr. Jones tells me that the sale of California wine would be very large. The French wines are too

light; the people want them a little heavy. The wine here, I am told, is very largely adulterated. Thus, one barrel of vino carlo will make five barrels of wine, mixed with quebracho for coloring and alcohol for strengthening purposes, and this sells for one and a third more than what our California wine would cost here.

Two of the largest importing houses in Villa del Pilar are Santos y Cia. and Depino y Cia.

To me, Villa del Pilar seems one of the most promising towns that I have seen in the Republic.

JOHN N. RUFFIN,

ASUNCION, *August 30, 1899.*

Consul.

AGRICULTURAL AND INDUSTRIAL CONDITIONS IN PARANA.

Of the three great southern States of Brazil (Rio Grande do Sul, Parana, and Santa Catharina), Parana is the least developed. Its area is 85,438 square miles, and its present population, exclusive of the Indians, is about 250,000, 55 per cent of which is colored.

Topographically, the State may be divided into two zones, representing the strongest possible contrast; the littoral zone, situated between the Atlantic Ocean and the mountain range which runs from north to south, parallel with the shore—the Serra do Mar; and the mountain zone extending west from there to the Parana River. The narrow strip along the seashore, as a rule, is swampy and unhealthy, the temperature varying between 10° and 35° C. (50° to 95° F.). The altitudes of the table-lands vary from 200 to 1,200 meters (656 to 3,936 feet). The sanitary conditions are very favorable, except where, as in Curityba and Lapa, the soil and water are, for want of proper drainage, poisoned by sewage. The climate is excellent. The average temperature is 17° C. (62° F.) for the subtropical part of Parana; in the table-lands the thermometer sometimes (in July) falls below the freezing point.

The harbor of the State—Paranaguá (with Antonina)—is connected with Curityba, the capital and distributive center, by a railroad which constitutes a masterpiece—not to say a miracle—of engineering, and on its way up the mountains (over 3,000 feet) leads through scenery of unparalleled beauty and grandeur.

It is to be regretted that none of the many pleasure seekers, travelers, tourists, artists, and students who annually migrate from the United States to France, Italy, Egypt, Germany, and Switzerland find it convenient to visit this beautiful and highly interesting American country, which could be made so easily accessible.

The railroad leading from Paranaguá to the interior (Compagnie générale de chemins de fer Brasiiliens) was built, with French capital, by the celebrated Brazilian engineer Teixeira Soares. It comprises the following sections: East from Paranaguá to Antonina, 16 kilometers (9.9 miles); west from Paranaguá to Curitiba, 102 kilometers (63.37 miles); and from Curitiba to Serrinba, 71 kilometers (44 miles); thence north to Ponta Grossa, 107 kilometers (66.48 miles), and south to Rio Negro, 89 kilometers (55.3 miles). There is a branch from Restinga to Porto Amazonas (over 12 miles) connecting the railroad with the Iguassú and its tributaries, along which the more important colonies are situated. The development of the Iguassú Valley is yet in a very primitive state, but this district is destined to have a great future.

The Iguassú River, a tributary to the Parana, is about 800 miles long, but only 220 miles are navigable—the section between Porto Amazonas to Porto da União. Although the latter is at present only a village of about 1,000 inhabitants, there is no doubt in my mind that it is one of the future big cities of Parana; that ere long it will be a large railroad center, outgrowing Curitiba, and will control the trade of the most important part of this promising young State. The construction of a railroad from the coast of Santa Catharina through the rich and populous German colonies Blumenau and Joinville, northwest to a point connecting with the Rio Grande and São Paulo road (now in course of construction) and the Iguassú region, is a question of a few years; and both these lines will have to touch Porto da União, which place will also be the terminal point of the proposed extension of the Parana trunk line from Restinga southwest along the Iguassú. After those railroads are completed, trade and commerce along the Iguassú region and within the fertile plateaus in the west of the State will be rapidly developed, and the bulk of the import and export trade of Parana will probably move by way of the Santa Catharina ports—Itajahy and São Francisco—more cheaply and quickly than by way of Paranaguá-Curitiba. I advise our capitalists and exporters to closely study the developments in the States of Parana and Santa Catharina. There is a very lucrative field for American enterprise, especially along the Iguassú.

Parana, like the two other South Brazilian States, is crippled for want of capital and proper immigration. Since emigration from Germany has practically ceased, the progress of southern Brazil is retarded.

Serious mistakes were made in the colonization of Parana. Until recently, immigration into Brazil was largely subsidized by the State and the National governments; but it seems the men who had charge of that function were not careful enough in the selection of

the material with which they colonized. Large sums of money were wasted and undesirable elements brought to the State in great numbers. Guided by the fear that any one class of immigrants might become too influential by concentration of its forces, some of those formerly in charge of the colonial system located the ninety colonies in such a way as to put the most heterogeneous elements into the closest proximity, intersecting small parcels of one nationality with small parcels of another—Austrian Poles with Russian Poles and Italians, Germans with Russian Poles, Italians with Prussian Poles, etc. Thus the colonial map of Parana presents the aspect of a German-Latin-Slavonic crazy quilt, a fact which is not conducive to a homogeneous development of the commonwealth.

Of the 250,000 inhabitants of the State, about half are natives of Brazil, 40,000 are German, about 40,000 are Italian, 35,000 are Polish (Austrian, Russian, and Prussian), and the rest are of Spanish, French, and other origin.

The import trade is almost exclusively in the hands of the Germans. It amounted in 1897 to \$1,000,000 in foreign goods and about \$175,000 in domestic goods. There were imported 362,000 kilograms (798,000 pounds) of coffee from Santos and Rio; 46,000 kilograms (101,400 pounds) of tobacco from Bahia; large quantities of dried beef and tongues from Rio Grande do Sul, Argentine, and Uruguay; canned goods and preserves from Germany, either direct or through dealers in Rio. Of manufactured articles, there were imported from Germany machinery, rails, iron, hardware, barbed wire, porcelain, china, earthen ware, lamps, pharmaceutical preparations and implements, cutlery, clothing, gents' furnishing, leather and leather ware, shotguns and revolvers, glassware; from the United States, druggists' supplies and coal oil; from Norway, 837,000 kilograms (1,845,300 pounds) of pine wood. Importation from France has almost entirely ceased. The cotton piece goods were imported from England, which country also furnished the entire supply of coal.

The export during 1897 consisted chiefly of yerba mate (Paraguay tea), some hard wood, and an experimental shipment of hides and horns by Burmester, Thon & Co. to France. Two-thirds of the yerba mate exported (\$1,500,000) went to Argentine and Uruguay and almost one-third to Chile. Unfortunately, none was exported to the United States. For various reasons, the import of mate into the United States ought to be encouraged. From my observation and personal experience, I feel justified in recommending its use as an excellent stimulant and nerve tonic. It is preeminently a temperance drink, and the temperance societies in the United States could do a very useful work by helping to popularize it. Yerba

mate, or Paraguay tea, as it is called abroad, has all the stimulating and sustaining qualities of Chinese tea or coffee, without the detrimental effect caused by their constant and excessive use—affection of liver and kidneys, irritation of the nervous system, etc.—and it is very cheap. The great masses in Uruguay and Argentine, including the famous gauchos (cowboys) of the great prairies, who drink it constantly instead of water, tea, or coffee, hardly ever use alcoholic stimulants. Intoxication is a rare occurrence there. It is almost incredible what hardships they undergo and how vigorous they are, while often for a successive number of days they use nothing to sustain them but mate.

Some time ago, I read an article in Harper's Weekly headed by the question, "What shall our soldiers in the Tropics drink?"

My answer to this is unqualifiedly mate—mate warm or cold, with sugar or without, but by all means mate.

In this connection, I take the liberty to call attention to the excellent article on the "Yerba-mate industry," written by Señor de Assis-Brasil, the minister from the United States of Brazil, and published in the May number of the Bulletin of the Bureau of American Republics.

Aside from the sanitary benefits, in helping to develop the mate industry in Parana, we would secure commercial advantages of great importance. The natural resources of the State of Parana are very considerable, but as yet little has been done to develop them. Only a comparatively small part of the State is under the influence of civilization; commerce is in its infancy, and the few industries represented in the State (16 mate mills, 7 small breweries, 3 foundries, 12 barrel factories, some little soap-making shops, a few tanneries, and a furniture factory in Curityba) are all in a very primitive condition. The only exception is a large match factory in Curityba, which is well equipped and does a very profitable business.

Although the soil on the highlands is fertile, containing excellent grazing land, and the climate very favorable, the animal industry—cattle, hog, and sheep raising—is very far from what it ought to be. For want of systematic care and regeneration, the cattle are degenerating and the pastures are neglected. During my travels through the interior of Parana, I found, even in districts with large herds of cattle, milk or fresh butter a rare luxury. They would rather go without milk than trouble themselves to milk the cows.

Agriculture and horticulture are in the same state of inertness, suffering from want of capital, deficient means of transportation, bad roads, and scarcity of help.

A very laudable effort to create a new industry, not only in the

State of Parana, but throughout southern Brazil, has been made by a teacher, Mr. Emil Schenk, of Curityba, who is working hard and successfully to establish rational bee culture. He travels, lectures, and publishes a paper to propagate this work, for which there is an excellent field throughout southern Brazil. I have induced Mr. Schenk to introduce American hives, implements, and machinery appertaining to apiculture. They have given good satisfaction and will undoubtedly, in the course of time, help to secure numerous orders for the specialists (in Ohio) from whom they were bought. Mr. Schenk deserves the fullest encouragement for his intelligent and public-spirited devotion to this good cause.

The State of Parana is rich in natural products, but none of its resources are properly explored.

There is an almost endless variety of valuable hard woods in the forests of Parana. Experts will remember the splendid exhibit which Barao do Serro Azul, president of the Chicago commission, brought to the World's Fair. There were hundreds of specimens, not less than one hundred and fifty different varieties from his own possessions. In the near future, when better transportation facilities are established in this State, these woods will be brought to our markets, where they are sure of a ready demand. The tree which furnishes the yerba mate (the *Ilex paraguensis*) grows wild in countless numbers in all the forests of Parana, particularly on the Iguassú and its tributaries.

Iron is found almost everywhere in Parana, manganese ore of exceptional richness being located near the port of Antonina and in the Campo Magro, 8 miles northwest of Curityba.

Diamonds are found in the rivers Tibagy and Jordão.

Gold is found in various places along the coast and in the municipalities of José dos Pinhaes, Tibagy, Rio Negro, and Morretes.

Lead exists in the Ribeira Valley.

Quicksilver was recently discovered in small quantities near the Iguassú, 3 miles from Palmeira.

Alum is located in Ponta Grossa.

Bituminous slate is found in large deposits in Serro Azul, Ponta Grossa, Guarapauva, and the valleys of the Iguassú and Rio Negro.

There are great deposits of marble, lime, and kaolin in the township of Paranaguá, Serro Azul, Curityba, Garapauva, and Arraial Queimados. Lime is burnt in the townships of Curityba, Tamandaré, and Serro Azul. In Curityba there are rich deposits of kaolin, granite in the Serra do Mar, and limestone in the campos.

The port of the State—Paranaguá—has regular steamer communication with Rio de Janeiro and the south twice a week, through the Lloyd Brasileiro and the Costeiro Line. Besides these, the fol-

lowing foreign steamers and sailing vessels called during the year 1897:

Nationality.	Number of vessels.	
	Steam.	Sailing.
British	27	1
German	26	2
Argentine	22	.....
Danish .....	.....	5
Dutch .....	.....	2
Spanish .....	.....	1
Swedish .....	.....	3
Norwegian	8	9
Uruguayan	7	.....
Total	90	23

In the interest of United States commerce, let us hope that the time will not be distant when the American flag will also be seen among the vessels that enter the ports of southern Brazil.

Commercially and industrially, there is no trace of American influence in the State of Parana; it is therefore doubly gratifying that American intellectuality is represented, highly and ably represented, in another direction—popular education. This report would be incomplete if it did not mention the splendid service rendered to the cause of humanity, Americanism, and good education by the two ladies who conduct the Presbyterian mission school in Curityba—Miss Mary P. Dascomb and Miss Elmira Kuhl. For over a quarter of a century they have devoted their high qualities of heart and mind to the mission work in Brazil, and came pioneering to Curityba over ten years ago. Their school now contains three hundred pupils of all nationalities and is prosperous and successful beyond anticipation.

EUGENE SEEGER,

Consul-General at Rio de Janeiro.

WASHINGTON, October 17, 1899.

TIN-WORKING INDUSTRY IN COLOMBIA.*

While the tin-working industry in this locality is not conducted in such a manner as to attract the attention of those not specially interested, it is nevertheless a somewhat important one. Considerable kitchen and other tinware is manufactured for local use. During the year ended June 30, 1898, sheet tin was imported here as follows:

From—	Weight.	
	<i>Kilos.</i>	<i>Pounds.</i>
England	31,213	68,812
France.....	1,105	2,436
Germany	3,708	8,174
United States.....	3,779	8,332
Total.....	39,805	87,753

Kerosene for this market is, as a rule, put up in square tin cans holding 5 gallons each, and, as a large quantity is imported, there is a good supply of these cans, which, after being emptied, are put to a great variety of uses. Many are worked into tinware for domestic use. The local tanners pay for these cans 30 centavos (5.71 cents gold) per can. There are no canning establishments in this district. Most of the balsam of copaiba, balsam of canime, and some of the balsam of tolu exported is shipped in kerosene cans. A considerable quantity of "monteca de corozo," a crude vegetable oil used for lubricating, is also put up in these cans.

In Barranquilla, there are five small tin shops, the names of the proprietors of which are as follows: Adolfo Simmonds, Victor Gomez M., Juan Lastra, Juan Cortez, Carlos Crecien. In addition to these, the Compañia Colombiana de Transportes, one of the largest steamboat companies, maintains a tin shop for work in connection with its boats. There are about forty-two steamers owned by different companies plying on the Magdalena River, most of which are supplied with tin roofs.

There are no houses which make a specialty of handling tin-working machinery and tools.

Importers do not as a rule confine themselves to particular lines, but handle all classes of merchandise. Two houses make a specialty of shelf and heavy hardware and tools. A number of other large importing houses handle hardware, machinery, and tools.

* This report was made at the instance of a New York export association, which has received Advance Sheets.

I find that the tin shops have practically no modern machinery, and are poorly supplied with tools. The proprietors of these shops tell me they would be pleased to receive catalogues of machinery and tools, with prices of same. No tin-working machinery is carried in stock by merchants here.

The following is a list of the tin-working tools and supplies I have found in local stores, together with prices asked for same:

Articles.	Price.	
Soldering irons:	<i>Pesos.*</i>	
10 ounces.....	1.40	\$0.27
12 ounces.....	1.60	.34
14 ounces.....	2.00	.39
Scissors (9 inches).....	5.00	.95
Blow-horn stake (6 kilograms).....	16.00	3.42
Anvils:		
5 kilograms.....	7.20	1.71
3 kilograms.....	5.60	1.06
Punches:		
Hollow, 0 $\frac{1}{4}$ inch.....	1.00	.19
Solid, 0 $\frac{1}{4}$ inch.....	1.00	.19
Hammers:		
4 ounces.....	2.00	.38
6 ounces.....	2.50	.48
8 ounces.....	3.00	.57
12 ounces.....	3.50	.67
Nippers:		
0 $\frac{1}{4}$ inch.....	1.60	.30
0 $\frac{1}{2}$ inch.....	2.00	.38
1 inch.....	2.40	.46

* The peso referred to in this report is the paper peso of Colombia.

These tools were principally imported from England and Germany. Solder is sold here at 50 centavos (9.52 cents gold) per pound. Some few tin-working tools are made here. They are sold at the following prices:

Articles.	Price.	
Blow-horn stake:	<i>Pesos.</i>	
30 by 20 inches.....	16.00	\$3.42
20 by 15 inches.....	12.00	2.28
Grooving stake:		
13 by 14 inches.....	14.00	2.66
10 by 12 inches.....	12.00	2.28
Hammers:		
4 ounces.....	1.00	.19
8 ounces.....	1.50	.29
12 ounces.....	2.00	.38
16 ounces.....	3.00	.57

The import duties on tin-working machinery and tinner's tools, sheet tin, and solder are as follows:

Tin-working machinery, not exceeding 1,000 kilograms, is included in fourth class and pays 5 centavos plus 20 per cent plus 25

per cent, or $7\frac{1}{2}$ centavos (1.42 cents gold) per kilogram of 2.2046 pounds.

Tin-working machinery exceeding 1,000 kilograms is included in second class and pays 1 centavo plus 20 per cent plus 25 per cent, or $1\frac{1}{2}$ centavos (0.28 cent gold) per kilogram of 2.2046 pounds.

Tin-working tools are included in eighth class and pay 40 centavos plus 20 per cent plus 25 per cent, or 60 centavos (11.42 cents gold) per kilogram of 2.2046 pounds.

Sheet tin is included in fourth class and pays 5 centavos plus 20 per cent plus 25 per cent, or $7\frac{1}{2}$ centavos (1.42 cents gold) per kilogram.

Solder is included in fifth class and pays 10 centavos plus 20 per cent plus 25 per cent, or 15 centavos (2.85 cents gold) per kilogram.

Tinware is included in sixth class and pays 20 centavos plus 20 per cent plus 25 per cent, or 30 centavos (5.7 cents gold) per kilogram. A large amount is imported.

W. IRVIN SHAW,
Consul.

BARRANQUILLA, *October 5, 1899.*

EXCHANGE IN COLOMBIA.

When quotations of exchange are given in Medellin, they are understood to refer to bills drawn on England at thirty days' sight, unless otherwise specified, and from these quotations the values of bills on other countries are determined, in accordance with the intrinsic values of the respective monetary units.

Premium on exchange is computed upon the somewhat inaccurate assumption that the par value of £20 is exactly 100 Colombian gold pesos, whereas the true equivalent of £20 is 100 gold pesos and 86 cents; so that, taking the present current rate as an example, it is not quite correct to say that exchange is at 355 per cent premium, because what we mean is that for £20—the equivalent, not of \$100, but of \$100.86 (Colombian gold pesos)—\$455 in Colombian paper currency are charged.

The Colombian monetary system is based upon the French, the Colombian gold peso being worth exactly 5 francs, and the monetary units of the principal countries that have commercial relations with Colombia have the following values, expressed in Colombian gold pesos and thousandths:

British pound sterling.....	\$5.043
American dollar.....	1.036
French franc.....	.200
German mark.....	.247

As the rates of exchange will show, gold still circulated in Colombia in 1881, but it was gradually replaced by silver money. Later on, the silver-peso piece, containing 900 parts of pure silver to 100 of alloy, disappeared before the half-peso piece, with 835 parts of pure metal to 165 parts of alloy; and in 1886 this baser coin was in turn supplanted by the paper peso, the present legal tender of the country.

The amount of paper money in circulation is officially stated to be \$40,000,000; not an excessive amount for a country containing about 5,000,000 inhabitants and having vast natural resources. Still, the paper peso has fallen to about one-fifth of its nominal value, and there is nothing in the present situation to warrant the supposition that the lowest point has as yet been reached.

The commercial prostration of Colombia is mainly due to the continued depression in foreign markets of the price of coffee, the principal export. The imports have naturally shrunk with the exports, and consequently the national revenue, derived from the custom-houses, has been proportionately reduced. At the same time, retrenchment of expenses has not been effected, and the country is burdened with a diplomatic and consular service and a standing army beyond its means.

Table showing the average monthly rate of premium paid in Medellin for bills of exchange on England from January to September 1, 1899.

Month.	Rate.	Month.	Rate.
January.....	238	July.....	310
February.....	240	August.....	440
March.....	243	September.....	355
April.....	248	Average.....	291
May.....	252		
June.....	300		

THOMAS HERRAN,

MEDELLIN, September 27, 1899.

Consul.

WATERWORKS IN PANAMA.

Consul-General Gudger sends from Panama, October 10, 1899, printed translation of an invitation for bids to build the aqueduct to supply the city with water, as follows:

Tenders will be received at the secretaryship of finance for the Department up to 2 p. m. on the 30th of December next for the construction of a water supply for the city of Panama. These tenders should be made on stamped paper, closed and sealed, and delivered to the senior official of the secretary's office, by whom they will be received up to within one hour before opening them.

Every proposal should be accompanied by a receipt stating that the sum of \$5,000 in money of 0.835 fine has been deposited in the Administration General of Finance as solvency deposit to guarantee the proposals made; such as are presented without this requisite will not be admitted.

At 2.30 p. m. on the 30th before mentioned the tenders presented in accordance with the prescribed conditions will be opened and read and at 4 p. m. on the third day after their reading adjudication will be made to the most favorable applicant.

The proposals should comply with the following conditions:

"ARTICLE 1. The contractors agree to build in the city of Panama and its suburbs, including La Boca, a plant for the distribution of water that shall be adequate for the necessities of the city, suburbs, and port.

"ART. 2. The contractors agree to present for approval of the Government within the term of three months at latest after the date of signing this contract, the plans and following documents:

"(1) Descriptive report of the proposed works.

"(2) Detail plans and profiles of the dam and intake.

"(3) Longitudinal profile of main pipe between the intake and the receiving and distributing receptacle on the incline of the Ancon.

"(4) Transverse profiles of crossings of river systems, and method used in crossing them.

"(5) Detail plan and profiles of the receiving and distributing receptacle.

"(6) Contour plan of the city and suburbs, scale of one one-thousandth, indicating diameters of pipes selected, pressures to be had at common and fire hydrants, valves, and other accessories to the distribution of water in the city.

"(7) Specifications of the works to be done and materials to be used.

"(8) Estimates of the general cost of the work.

"(9) Detail cost of the various parts of the work in full.

"(10) Description of keys, air valves, fire hydrants, fountains, etc., and of the mechanisms to be employed in distributing water in the houses.

"ART. 3. The contractors agree also to submit for the approval of the Government, within the term of one year from the date of signing this contract, the detail plans of the proposed method of clarification and filtration of the water, these to be based upon studies made of the waters of the Juan Diaz during the rainy season; said plans to be accompanied by a clear description of observations made in said studies.

"ART. 4. In the work of the distribution of water, the plans ought to conform to the following general conditions:

"(a) The water will be taken from the drainage area of the River Juan Diaz.

"(b) The main pipe will have diameter to insure with perfect certainty, and even after the pipes are old, a discharge of water under all circumstances of not less than 6,000,000 liters (1,500,000 gallons approximately) in twenty-four hours.

"(c) The intake must be located at a sufficient altitude to satisfy the conditions under heading b.

"The bottom of the reservoir to be situated on Ancon Hill must be at least 45 meters (148½ feet) above sea level or at an altitude above the Plaza Cathedral of 38 meters (125 feet).

"(d) The system of distributing pipes in the city will have to be calculated using as a base the amount of water needed for fires, such a base to be equal to a volume of water of 6,000 liters (1,500 gallons) per minute and with pressure on the fire hydrants of 26 meters (86 feet) above the Santa Anna Plaza.

"(e) The contracting company agrees to locate a sufficient number of hydrants so that it will not be necessary to use more than 100 meters (333 feet) of hose when directing four lines of hose at the same point.

"(f) The contractors will be allowed to begin by constructing receiving and distributing tanks of 2,000 cubic meters (500,000 gallons) capacity, but with clear understanding that they will have to increase their receptacles to a capacity of 4,000 cubic meters (1,000,000 gallons) as soon as the requirements should impose such conditions.

"ART. 5. The materials to be used will be first class with respect to resistance and durability, and the Government will have the right to have them inspected either at the city or at the places where they are made and to refuse them if said conditions are not fulfilled.

"ART. 6. The contracting company agrees to accept within the term of fifteen days the modifications introduced by the Government to plans presented according to article 2, so that the work shall be constructed under proper conditions of stability and endurance, and satisfy completely the necessities of the town, suburbs, and port.

"In case of disagreement between the Government and contractors, the modifications will be submitted to a technical commission composed of an engineer representing each party, and if said commission should disagree they will appoint a third person; but if they should not agree in the appointment of the third person, he will be appointed by the high tribunal of justice of the district of Panama, and shall be a person of known reputation. The judgment of said commission will be final and obligatory to the parties hereto.

"After any modifications are accepted by the contractors or judgment has been passed by the technical commission, the contractors will have a month in which to make the required changes in the plant, and the date will begin to count from the time that the modifications have been accepted by the contractors or from the date the technical commission has notified the parties hereto of their decision.

"ART. 7. The contractors will take charge of the work actually in course of construction by the Government within a period of three months after the signing of this contract, according to article 29, and they must finish the work, including the distribution to houses, within thirty months.

"ART. 8. During the work, even after its completion, the Government will have the right to appoint temporary or permanent technical commissions to inspect the construction of the work or the condition of the same and inform the Government; in the first place, to see that the work of construction is carried on according to the approved plans; in the second place, to see that the work is kept in a state of security and good service.

"If the commission should find that the contractors were not carrying out their agreement, any dispute is to be settled according to article 6.

"ART. 9. The Government will reserve the right to have the distributed water examined whenever it should be judged convenient, be it by a special commission or by the board of health, to ascertain whether the distributed water is in the normal condition of the water of the River Juan Diaz, a result which the contractors are obliged to maintain in all the systems of the distributing pipes. Said examination is to be performed in the presence of experts appointed by the contracting company.

"ART. 10. The constructing company agrees to:

"First. Establish in the city and at places to be selected by the Government, four ornamental fountains, whose model is to be approved by the Government, the total value not to exceed \$14,000 silver for the whole four.

"Second. To establish four fountains (Borne fountains) from which poor people or those who not having dwellings stand in absolute need thereof can draw a gratuitous supply of water.

"Third. To establish the required number of meter fountains so as to sell water to persons wishing it, and to ships and small boats anchored at the port.

"ART. 11. The contractors bind themselves to provide gratis to the Government the water required for the street sprinkling of the city, the palace, city hall, station houses, to the establishments of beneficence, prisons within city limits, schools established or to be established in the city and belonging to national, departmental, and municipal governments. The maximum of water to be provided by this article will be 180 cubic meters (45,000 gallons) every twenty-four hours.

"ART. 12. The contractors agree to place at the disposition of the authorities, in case of fires, all the water of the tanks and of the pipes, but without any right to compensation for said service. Therefore, the contractors are obliged at all times to have the quantity of water required in case of fires and without injury to the general supply, to establish and maintain in the city the required number of hydrants the Government may deem necessary.

"If it should be proved in case of fire that the pipe system is not in condition to give the 6,000 liters per minute, according to heading *d* of article 4, and the cause does not come from something beyond the control of the contractor, he will have to pay the damage resulting up to the limit of \$10,000 silver of 0.835 fine, according to the extent of the case. This tax will be imposed by the highest political authority of the city.

"ART. 13. The contractors will lay the distributing pipes up to the building line, but the placing of pipes within the houses will be paid for by the owners, who may contract for them with the contractors or with outside parties under their inspection.

"ART. 14. If it should come to pass that the service of water should be interrupted in the city or any of its suburbs over twenty-four hours and the contractors should not be able to prove a sufficient cause beyond their control, they will be obliged to pay a fine not to exceed \$200 silver of 0.835 fine per day during all the period of the interruption; said fine to be imposed by the highest political authority of the city.

"ART. 15. The contractors will provide water meters or faucets of such a diameter and pressure as will yield the required quantity of water.

"ART. 16. The contractors will have the right to collect up to \$1 Colombian silver of 0.835 fine for each 1,000 liters of water.

"ART. 17. The contractors will collect monthly the value of the water sold, and in case of delay they may suspend the supply, giving an account to the respective authority, in order that he may render effective the contribution mentioned in clause 8 of article 27, not only respecting ensuing months, but also regarding those unpaid.

"ART. 18. The contractors are obliged to maintain the distribution of water and accessories in perfect state of service during all the time of this privilege and to hand over the plant in the same condition to the Government—that is, the works shall pass to and become the property of the State at the end of the privilege granted to the contractors.

"ART. 19. The contractors will not be allowed to transfer this contract to a foreign government; but the contractors may transfer it to individuals or companies or joint-stock companies, provided the direction remains in charge of the contractor.

"The government of the Department of Panama hereby agrees to ratify this franchise so that from the day of the forming of the joint-stock company it will be duly recognized and said company placed in possession of this privilege, provided said company has assumed the present contract and has been granted all its rights and obligations by the contractor.

"ART. 20. The contractors will submit to the approval of the Government, at least one month previous to giving to the public the water service, the laws to be followed in all that belongs to the water supply and to the maintenance of the works.

"ART. 21. If the contractors should establish their residence out of Panama, they will be obliged to have a representative in the city, duly authorized and responsible for the execution of this contract in all its parts.

"The fulfillment of a duty or obligation by the contractors will not be prevented on account of lack of power or instructions given to their representative. The contractors or their representatives agree to comply without restrictions with the laws of the Republic in everything relative to this contract; they also expressly agree not to demand diplomatic intervention in any controversy that may arise about the interpretation of the obligations of this contract, except in the case of lack of justice.

"ART. 22. To guarantee the due fulfillment of the obligations of this contract, the contractors will deposit with the State treasurer the sum of \$30,000 silver in effective currency. This deposit will be made at the time the contract is signed.

"ART. 23. The guaranty will be turned over to the contractors when they have brought to the city materials to be used in the construction of the waterworks, the cost of which shall be equal to twice the sum represented by the guaranty. The materials delivered, as well as the work done, shall then represent the guaranty to assure the fulfillment of the contract.

"ART. 24. The guaranty in currency, or the materials delivered on the Isthmus and intended for the waterworks construction which represent said guaranty, will become the property of the Government in case the contract, after complying with the formalities prescribed by the Colombian laws, should be declared null by lack of fulfillment on the part of the contractors of one or more of the obligations stipulated, among which will figure the continuance of the studies and work actually under execution (article 7) by the Government, within a period of three months after signing this contract. It will also be a cause for the annulment of this contract, if the contractors do not (within three months after starting the work) have in the city or on the road to the works materials destined for the company and representing at least twice the value of the guaranty already spoken of. The company will also be obliged to have at this time at the works where the materials are made, a number of tubes that shall represent 5 kilometers in length, so that the Government may have them inspected if deemed necessary.

"It will also be a cause for annulment if an amount of work representing \$200,000 silver is not completed at the ending of the first year. The cost of materials brought to the Isthmus will be included in said sum.

"ART. 25. The contractors will receive under inventory the work of the aqueduct in its present condition, with the plans, dwellings of employees and laborers, bridges, material, etc., obliging themselves to pay its value to the Department in coin, or to discount it from the annual interest due them according to article 27, clause 8, the value to be fixed by experts appointed in the form stated in the second clause of article 6.

"ART. 26. The governor of the Department of Panama grants to the contractors exclusive privilege to exploit the enterprise for a term lasting seventy-five years. This term will begin to count from the day that the waterworks are placed at the service of the public.

"ART. 27. The government of the Department of Panama obligates itself:

"First. During this contract, not to allow any persons or companies to establish any system of waterworks in the city of Panama, its suburbs, or La Boca, and hydrographic basin of the Juan Diaz and tributaries, as well as in the inhabited parts of the suburbs, the limits of which will be fixed by the Government. In the same way the Government will not allow any persons or company to construct aqueducts, drains, or sewers, and use water of the same river above the dam.

"Second. To prohibit during this privilege, as well in the principal valley as in

the secondary hydrographic valleys of the Juan Diaz, the building of unsanitary establishments that may contaminate the water of said hydrographic valleys.

"The political authorities of the district of Panama will adopt the necessary measures for the strict observance of this regulation.

"Third. The tanks, wells, or any receptacles for the collection of rain water in the interior of the houses will be allowed to remain; but the sale of water from these receptacles is prohibited.

"Fourth. To declare the works a public necessity, and to uphold the contractor in any legal questions that may arise in regard to such declaration.

"Fifth. Not to tax the enterprise for the distribution of water, its works, materials, or anything pertaining to the water service, with ordinary or extraordinary taxes, be they departmental or municipal.

"The contractors will not be obliged to pay the Government duties on the introduction of articles, whether they be manufactured or not, nor on materials to be employed on the works for any purpose.

"Sixth. To grant to the contractors the right of condemnation for the ground required for the work in general out of town and the right to use the public highways; should it be required to make expropriations according to the laws, the cost of the said expropriations made by the judicial authorities will be paid by the contractors.

"If the said expropriations are not made within the limited time and occasion a delay to the contractors, the contractors will have a right to an extension of time in which to finish the work for a period equal to that lost in delay; the period not to exceed thirty months.

"Seventh. To cede to the contractors the free use of the streets and public ways without any other restriction than that occasioned by repairing the damages done in locating the tubes and other works connected therewith.

"Eighth. To guarantee to the contractors an annual interest of 6 per cent in gold upon \$500,000 gold of the invested capital for the term of twenty-five years, making use to this end of the authority conceded in existing ordinances and moving for the establishment by legal measures of a contribution or tax upon town properties which do not consume water from the aqueduct, or which do not consume a quantity equivalent to the value of water they should consume; dedicating this contribution to the above-mentioned guaranty.

"ART. 28. All disagreements that may arise between the government of the Department and the contractors will be decided by a tribunal of expert arbiters; each part will appoint its own expert, and these experts will designate the third one. In case these experts do not agree in the appointment of a third one, he will be appointed by the superior tribunal of justice of the district.

"ART. 29. The present contract will be considered a public document, and the contractors will have a right to appoint a representative to subscribe in their names. The contractors will have to defray only their expenses, the stamped paper, and the notary's dues, but not the payment of the registry tax."

Proposals in the following terms will also be entertained:

For the construction of the aqueduct for a fixed sum for account of the Government, which shall guarantee the payment of the work either by means of resources already created by ordinance, or by part of them combined with the exploitation of the work.

The work shall be constructed in accordance with the technical stipulations already stated herein, regarding which the plans in the possession of the Government may be consulted, as also the work at present being executed for its account.

To supply the Government with the requisite capital for the total or partial construction of the work, the said construction belonging to the Government and the

payment of capital and interest being effected from the before-mentioned resources and from the earnings of the enterprise, once it is placed at the service of the public.

The time for the presentation of tenders may be extended by the Government for thirty days, and they may not be entertained if upon the expiration of this term the canal company shall have undertaken to construct the aqueduct as a condition of the new extension of contract which it is seeking.

The most advantageous proposal for the construction of the work under privilege will be the one combining the following conditions:

Better guaranty of compliance; reduction in the price of water; reduction of the term of privilege and other terms stipulated; reduction in the rate of interest mentioned in clause 8 of article 27, and in the guaranteed capital, as also in the term to which the guaranty extends.

For the construction of the work for a fixed sum, those proposals will be most advantageous which offer the best guaranty of fulfillment, smallest investment of capital and time, and best conditions of payment; and for the construction if Government loans the capital, the proposal offering better guaranty of delivery of capital to the Government, better conditions of reimbursement, interest upon such reimbursement, etc.

For the Secretary of Finance, the chief official,

T. MARTIN FEUILLET.

PANAMA, *September 15, 1899.*

BANKS IN VENEZUELA.

Consul Plumacher writes from Maracaibo, October 4, 1899:

As this consulate often receives letters of inquiry as to private and national banks in Venezuela, I submit translation of a printed statement referring to banking institutions here:

COMPANIA DE CRÉDITO.

This institution was created by Gen. Guzman Blanco, Provisional President of the Republic, on the 9th of December, 1870. Its members were persons who held bonds against the national treasury. A new company was organized under the same name on December 24, 1872, and the members or shareholders were Messrs. Carlos Hahn, H. L. Boulton & Co., Y. Rohl & Co., Evás Bros. & Co., Santana Bros. & Co., Calixto Leon Company, and Leseur Römer & Co.

The capital of this second company amounted to \$160,000 in cash.

Both companies have transacted banking operations; present address, No. 22, between San Jacinto and Los Fraposos.

BANCO COMERCIAL.

This was established by a joint-stock company in August, 1883, with a capital of 3,200,000 bolivars (\$617,600). It took over in 1884 the business of the Bank of Caracas. It was located at No. 29, between Sociedad and Camejo, until August, 1896, when it was converted into the Bank of Venezuela.

BANCO DE VENEZUELA.

This was established in 1890 by a joint-stock company with a capital of 8,000,000 bolivars (\$1,544,000), increased afterwards to 15,000,000 bolivars (\$2,895,000), and reduced lately to 12,000,000 bolivars (\$2,316,000).

It transacts all kinds of banking operations, advances money for the payment of Government expenses, and collects all national dues. It has established agencies in all the ports and principal towns of the Republic. The president of its board of directors is Mr. Martin H. Pérez; secretary, Mr. Heriberto Lobo.

BANCO DE CARACAS.

This was established by a joint-stock company, promoted by Messrs. H. L. Boulton & Co., Mendoza & Co., Leseur Römer & Co., Ed. and Osc. Baasch, Luis Brandt, and Eleuterio Morales; capital, 6,000,000 bolivars (\$1,158,000); address, No. 47, South avenue.

It transacts all kinds of banking business; reserve, 616,250.70 bolivars (\$118,800). The president of the board of directors is Mr. M. A. Matos; manager, Mr. Luis A. Castillo.

BANCO DE MARACAIBO.

This was founded in Maracaibo in 1883 by the Mutual Aid Society, in the form of a joint-stock company, with a capital of 160,000 bolivars (\$30,880), augmented successively to 320,000 bolivars (\$61,700), 800,000 bolivars (\$154,400), and then 1,250,000 bolivars (\$241,250). The present manager is Mr. Alberto Estrada.

BANCO MONTE DE PIEDAD.

This institution was established under the name "Monte de Piedad" in 1890 by a joint-stock company promoted by Mr. José Martínez, with the object of loaning money on jewelry; capital, 1,200,000 bolivars (\$231,600). It was afterwards given the name of bank, which has recently been changed to "Instituto de Crédito Mobiliario" (Institute of Credit on Furniture); capital, 84,000 bolivars (\$16,200); address, No. 32, corner of Muínoz.

BANCO COLONIAL BRITANICO.

This was established in Caracas by the Colonial Bank of England in 1839; liquidated in 1848.

BANCO NACIONAL.

This was established by the National Congress in Caracas in May, 1841; capital, \$2,500,000; liquidated in 1850.

BANCO DE VENEZUELA.

This institution was formed by a joint-stock company in 1861; capital, \$11,804,111.12; liquidated in 1862.

BANCO DE LONDRES Y VENEZUELA.

This was founded in Caracas by a stock company in 1865; capital, £500,000 (\$3,088,000); liquidated in 1867.

BANCO DE CARABOBA.

This was founded in Valencia in 1883 by a stock company; capital, 800,000 bolivars. In 1891, it was converted into an agency of the Bank of Venezuela, and it was liquidated in 1896.

BANCO DE CARACAS.

Three credit institutions have existed under this name. The first was established in May, 1876, with a capital of \$160,000 (Venezuelan*); the second, in August, 1877, with a capital of \$200,000 (Venezuelan), which was augmented to \$339,500 in 1878; and the third, in April, 1879, with a capital of \$260,000 (Venezuelan). This last was suspended in February, 1884.

The object of these societies was to supply the National Government with funds, collect the custom-house duties, and pay the appropriation bills.

ACTIVITY IN PARA.

This week has been a busy one in various industries at Para. The ground was broken for the fourth ice factory and for another soap factory. The material throughout is from the United States and the work is being done under the management of an American. Two immense hotels have been started, an improved sewerage system has been begun, ground has been broken for the new market house, and the foundation for additional waterworks is being laid. Material for sugar mills from the United States comes in shiploads.

Business in Manaos is also booming. Mr. Charles R. Flint, of New York, is behind so many different enterprises and industries there that the city is frequently said to be practically controlled by him. He has contracted to pave the streets, owns the electric plants, has built the principal bridges, has controlling interest in the telephone, and furnished the bulk of the capital invested in the electric railway, now 15 miles in length, and to be extended 7 miles. The company is doing a rushing business, and the road will compare favorably with the very best and most modern in any part of the world. Mr. Flint is also interested in one of the leading rubber houses at Manaos, as well as in a similar firm here at Para. It is reported that the finest hotel in South America is to be erected at Manaos by a syndicate headed by Mr. Flint.

There has been fairly brisk buying in the rubber market, which, coupled with advices from Rio de Janeiro reporting the sale of two of the most important railroads in Brazil to an English syndicate, has caused quite a healthy advance in exchange.

K. K. KENNEDAY,
Consul.

PARA, *October 13, 1899.*

* The last quotation of the Venezuelan peso, or dollar (silver), by the United States Treasury Department in its foreign-currency valuation list was, for the year 1874, 77.73 cents.

GOLD MINING IN ALASKA.

Under date of September 14, 1899, Consul McCook, of Dawson City, transmits the following information relative to conditions in the gold fields of Alaska:

There is great activity in the Forty-Mile mining district, Alaska. The richness of Jack Wade Creek and other creeks in that section has induced hundreds of men to go there during the past month.

Charlie River, about 90 miles below Eagle City, developed good prospects last winter. Charlie River is not to be confounded with Charlie Creek. The first is about the size of the Klondike here, and boats can be poled up for 100 miles. It is safe to say some one hundred men will prospect there the coming winter.

At Eagle City, there is not an idle man. This town should make rapid progress when a good wagon road is built to connect with the Forty-Mile mining district. American Creek, near by, and its tributaries have been found to contain good paying ground.

The rush to Cape Nome continues from mining camps along the Yukon. Eagle City, a thriving camp of 1,500, has lost 500. At Circle City, only about 75 remain out of 300; and Rampart City, which once boasted of a population of 1,600, can now only show 200. Many Americans now in Dawson are only waiting to follow the ice down the coming spring. Cape Nome has now a population numbering thousands, and supports several general merchandise and furnishing stores (clothing, furs, etc.), many saloons, dance halls, etc. As to the richness of the country, there can be no doubt, especially of the deposit along the shore—the so-called “ruby sand” has been traced to Port Clarence, 130 miles west of Cape Nome. The creeks adjacent to Cape Nome, back from Golapin Bay, are also improving in output under careful prospecting. It is calculated that upwards of 20,000 people will be in the vicinity of Cape Nome the coming year.

“Ruby sand,” a sample of which—from Cape Nome—I have lately seen, is not the ordinary beach sand, but is composed of very fine gravel and minute specimens of the common garnet or false ruby, from which the sand gets its name. Interspersed throughout the sample are gold particles, some of medium fineness, some as coarse as ordinary rifle powder. Amalgamating machines will be necessary to save all of this gold, as it is calculated that fully 40 per cent is lost in working with the common rocker. It would pay to send such machines to Cape Nome, as, with over 100 miles of beach diggings of this description, many will be needed.

CONDITIONS IN DAWSON CITY.

BUILDING AND BUSINESS.

This summer, a better class of buildings has been erected in Dawson. Several new hotels have been built, with electric lights and other modern conveniences, the rooms renting on an average at \$100 per month. Restaurants adhere to the prices of a year ago, but good board can be obtained at the clubs and messes for \$75 per month. The new buildings are from two to three stories high, the lower parts being occupied by saloons and stores, while the upper floors are devoted to offices and lodging rooms. Rents of rooms in buildings centrally located, however, have not depreciated.

Storekeepers have done well the past summer, although the prices of last year have not been maintained.

Dawson has now an organized board of trade, officered by sound business men.

The embargo on lager beer and liquors has been raised. Some 2,500 barrels of bottled beer have been warehoused during the hot spell, awaiting release by the authorities. The local breweries are prohibited from making beer.

Many miners' families have come in for the winter.

FREIGHT AND NAVIGATION.

I understand there is quite a congestion of freight at White Horse, a great quantity of which is machinery for thawing and other mining purposes. The upper-river steamers, of which there are over a dozen running between here and White Horse, will not, it is thought, be able to take all the freight away before the close of navigation. It now takes from twelve to fourteen days to make the round trip (against eight or nine during June, July, and August), on account of the days being so much shorter.

TYPHOID FEVER.

The number of cases of typhoid fever in Dawson during the past month has averaged about one hundred in St. Mary's and the Good Samaritan hospitals and twenty-five in private institutions. There are now only about seventy-five cases in all. Last year, the hospitals were not prepared to take care of the numerous patients, and many were compelled to use bedsteads with only a pair or two of blankets to take the place of mattresses. The hospitals are now better equipped. The death rate has notably decreased.

PACK SERVICE TO THE MINES.

The packing of supplies to the mines on the creeks has proved very profitable all summer, rates averaging 1 cent per pound per mile for horse or mule service. Dogs also take a prominent part in this work, carrying from 25 to 40 pounds each (the goods being put in canvas bags, used as pack saddles) and going in trains of from one to ten animals.

MINING.

A larger number of claims have been worked in this section this summer than last, some of them being operated with machinery running the full twenty-four hours. This should make the output of gold over ten millions for the past twelve months.

Shipments of gold to date have been:

Via St. Michaels.....	\$6, 347, 745
Via Skagway.....	\$900, 000
Yet to be sent.....	500, 000
	1, 400, 000
	7, 747, 745
Supposed not registered.....	1, 500, 000
Total	9, 247, 745

MONEY-ORDER SERVICE.

The postal money-order service at Dawson has been of inestimable value to persons sending out small amounts to their friends. I submit a report of the amounts issued each week for seven weeks, showing a steady increase:

Orders issued from—

July 16 to 22.....	\$1, 235. 00
July 23 to 31.....	4, 167. 50
August 1 to 8.....	5, 959. 22
August 9 to 15.....	6, 300. 75
August 16 to 22.....	4, 304. 05
August 23 to 31.....	7, 829. 75
September 1 to 8.....	8, 578. 52
Total	38, 374. 79

J. C. McCook,

DAWSON CITY, September 14, 1899.

Consul.

NEW BRITISH-CANADIAN MAIL SERVICE.

The Canadian Government has shelved for at least two years its ambitious project of running an all-the-year-round 21-knot mail service between Great Britain and the Dominion. A contract has just been entered into between the Canadian and Imperial Governments and Elder, Dempster & Co., of Liverpool, for the carrying of the Canadian mails for two years, the service to be weekly. Elder, Dempster & Co. have for some months past been carrying specially directed letters to Canada from Bristol. The new contract goes into force on the 11th of November. Liverpool, instead of Bristol, will be the English port of the new service. This is a great disappointment to the local authorities of Bristol, who have announced that in consequence of the change the contemplated improvements in the harbor at Avonmouth will be abandoned. During the summer season, the new service will resume landing the mails at Rimouski, on the south shore of the Lower St. Lawrence. Rimouski is not a harbor, properly speaking, but only a landing place. After stopping at Rimouski the steamer will go on to Quebec and Montreal. During the winter months the Canadian termini will be Halifax, Nova Scotia, and St. John, New Brunswick. Although the fast-mail scheme has been abandoned, at least for the present, the intention of the authorities is that the new service shall be exclusively British-Canadian. The public understanding here is that the contract of the new service specifically prohibits Elder, Dempster & Co.'s mail boats from calling at any United States port. However this may be, it seems to be agreed that in the future the ships carrying the Canadian mails from Great Britain and Ireland will touch only at Canadian ports, both winter and summer. The Irish port of call for the new service will be Moville, in the north of Ireland.

LIVERPOOL, *November 3, 1899.*

JAMES BOYLE,
Consul.

PROGRESS IN STEAM NAVIGATION.

The address of Sir William White before the British Association at Dover last September is an excellent summary of the progress made in ocean-steamship construction. In 1840, the side-wheel ship *Britannia* of the Cunard Line, 207 feet long, 750 horsepower, maintained a sea speed of about $8\frac{1}{2}$ knots on a coal consumption of 40 tons a day. Speed has been increased from $8\frac{1}{2}$ to $22\frac{1}{2}$ knots and

the time of the voyage reduced to about 38 per cent of what it was in 1840. Steamers have more than trebled in length, about doubled in breadth, and increased tenfold in displacement. The engine power has been made forty times as great. The ratio of horsepower to the weight carried has increased fourfold. The rate of coal consumption (measured by horsepower per hour) is now only one-third of what it was in 1840. In 1871, the White Star liner *Oceanic*, 420 feet long, 7,200 tons displacement, with engines of 3,000 horsepower, had a speed of $14\frac{1}{2}$ knots. In 1889 the *Teutonic*, of the same line, was built, having a length of 565 feet, 16,000 tons displacement, 17,000 indicated horsepower, 20 knots' speed, and coal consumption of 300 tons a day; then followed, in 1894, the Cunarder *Campania*, 600 feet long, 20,000 tons displacement, 28,000 horsepower, at full speed of 22 knots, coal consumption 500 tons a day; and in 1899 the new *Oceanic* of the White Star Line, 685 feet, 25,000 tons, and a speed of about 22 knots. The *Kaiser Wilhelm der Grosse*, of the North German Lloyd Line, is 625 feet long and has maintained a speed of $22\frac{1}{2}$ knots. A larger steamer is now building, the *Deutschland*, 660 feet, 23,000 tons, 33,000 horsepower, with an estimated speed of $23\frac{1}{2}$ knots.

Sir William White is confident that the maximum of size and speed has not been reached, and says that "increase in length and weight favors the better maintenance of speed at sea. The tendency, therefore, will be to even greater regularity of service than at present. Quicker passages will, to some extent, diminish risks."

The *Kaiser Friedrich*, which was one of two vessels built by the North German Lloyd for their new fast line, has been rejected on account of not coming up to contract requirements as to speed. She was built by Schichau, of Elbing, the yacht and torpedo-boat builder, and was to have been half a knot faster than the *Kaiser William der Grosse*. She is 600 feet long, with engines of 25,000 horsepower. This fine ship has been taken over by the Hamburg-American Line—the largest fleet now in the world—and is in their New York service.

FRANK D. HILL,
Consul.

AMSTERDAM, October 16, 1899.

A NEW STEP IN ELECTRIC LIGHTING.

Electrical illumination has come to play so large and important a part in the economy of daily life that any invention which may have the effect of cheapening the cost of electric lighting by increasing the efficiency of the lamp, or of improving the color or quality of the light itself, must command a certain degree of popular interest. These attributes would seem to belong to the recent invention of Prof. Walther Nernst, of the University of Göttingen, a young man who is known by his published works as a leading authority on applied chemistry and an original thinker and worker in the field of physical science.

It is generally known that the efficiency of an incandescent body is measured by the temperature to which it can be safely raised. In the ordinary bulb lamp, the incandescent body which emits the light is a long, slender filament of carbon attached at its two ends by platinum connections, and set in a hermetically sealed glass bulb from which the atmosphere has been exhausted. As this filament is necessarily slender and delicate, the temperature which it will stand—and consequently its luminous efficiency—is definitely limited, and as this limit was practically reached a number of years ago, there has been comparatively little improvement in incandescent lamps during the past ten or fifteen years. While nearly every other feature of an electric-lighting plant, generators, rectifiers, conductors, volt and ampère meters, etc., have been constantly and steadily advanced toward perfection, the lamp has remained limited as regards efficiency, which varies from 3 to 5 watts per candle, as well as in respect to amount and variation of pressure, and is moreover not wholly satisfactory as to cost of maintenance.

The problem undertaken by Professor Nernst was to find an incandescent filament or body which would stand a much higher temperature than carbon—one that would be less sensitive to variations of pressure and, if possible, work without being sustained in a vacuum. For this purpose he chose the oxides of thorium, zirconium, cerium, and the other so-called rare earths which are used in making the mantles for incandescent gas lights of the Auer von Welsbach type. Just what combination of these earths he has found most effective is not revealed, but his lamp consists of a rod of this material, 3 or 4 inches in length, held by metallic attachments at either end and inclosed for safety in an open glass globe.

This combination of oxides is in the highest degree refractory—that is, capable of withstanding very high temperature—but it is at

the same time a nonconductor of electricity when cold and only becomes an electrolyte when heated to a certain temperature. Its obvious advantage is, therefore, that it will bear pressures which would quickly destroy an ordinary carbon filament; and, as the luminosity of the lamp is measured by the temperature which it can withstand, it follows that the Nernst lamp should produce a given quantity of light cheaper than by the ordinary lamp with carbon filament. It is claimed for it that its consumption, including the resistance, is but 1.5 watts per candle for large lamps and 1.6 watts for small lights or low pressures. Another—perhaps the chief—advantage of the new lamp is that whereas the light of an ordinary carbon incandescent lamp is too yellow, an arc light too blue, and a Welsbach gas light of a greenish hue, the Nernst lamp gives a light having almost precisely the same spectrum as sunlight, and it is asserted that this is the only artificial light by which delicate colors can be matched with practicable certainty.

On the other hand, Professor Nernst's invention would seem to be subject, at its present stage of development, to two grave defects, both of which may be more or less successfully overcome, but which now seriously restrict its commercial value. The first of these is the fact that it does not light instantaneously by simply turning on the current; the rod of refractory oxides must first be heated. For this purpose two devices are used—a small spirit lamp which must be lighted with a match and turned out when the electrolyte has become hot and begun to glow, and, secondly, a heater, in the form of a coil surrounding, but not touching, the incandescent glower. This heater is supplied by the current from the moment when it is turned on, and is so arranged that when the rod has been heated and has begun to glow, the heater is automatically cut out of the circuit and relapses into disuse until needed again to light the lamp. All this apparatus, although beautiful as a mechanical device, is so expensive as to seriously limit the value of the lamp for practical purposes. Thirdly, the life of the incandescent glower, if operated at so high a temperature as to reach the best efficiency—say, two-thirds of a candle per watt—does not exceed three hundred hours, while the carbon filament is good for from six hundred to one thousand hours.

Until the first two of these defects can be reasonably overcome by further improvements, the use of the Nernst lamp will probably be confined mainly to large, powerful lights in stores, restaurants, churches, railway stations, and public buildings, where the few seconds of time which is required to artificially heat the oxide rod to conductivity and the initial cost of the lamp itself are of small importance compared with the saving of 2 watts per candle and the

advantages of an electric light as genial and normal as sunlight. For photography, it will probably supersede all other forms of artificial light and make the photographer practically independent of weather.

Any general adoption of the Nernst light would require that in the end systems of distribution, which are now made for the carbon lamp, should be laid out to suit it, and this would lead to important economies in cables, which now form so large a part of the cost of distribution systems. The new lamp can not only compete with the carbon filament at all ordinary pressures to which the latter is adapted, but in the higher pressures it will have the field practically to itself. Though not at present a perfected invention, it is entitled to the interest which belongs to a discovery that involves a radical departure from existing methods and points out a new direction in which future progress is likely to be made.

FRANK H. MASON,
Consul-General.

BERLIN, *October 27, 1899.*

PHOTOGRAPHIC PAPER IN GERMANY.*

In Germany, hitherto, there has been used for the "cyanotypic or blue process" only the ferroprussiate paper (white lines on blue ground) and the ferrogallie paper (black lines on white ground). These papers, in respect to durability, high sensitiveness, and simplicity of use, have been constantly improved and are being exported in large quantities. The different kinds of paper used by professional and amateur photographers may be divided into the following groups: (1) Albumen paper; (2) cellodine, aristotype, and platino-type paper; (3) bromide paper; (4) carbon tissue.

The albumen paper and the unglazed salt paper are largely used by the old photographic establishments and are supplied by the following manufactories: Vereinigte Fabrik Photographische Papiere, in Dresden; Dresdener Albumen Paper Manufactory, in Dresden; Trapp & Münch, Friedberg. These papers are recognized as of the best quality the world over.

Of late, a new paper has obtained good footing. It is of the emulsion-albumen order and is known as protalbin paper. It is sold by its inventor, Dr. Lilienfeld, at his protalbin factory in Vienna; it is also produced by the Vereinigte Fabrik Photographische Papiere, in Dresden, Saxony.

* This report was made in answer to inquiries by a resident of New Jersey, to whom Advance Sheets have been sent.

The formerly much used aristo or chloride-of-silver gelatin paper has now a limited demand, coming mostly from amateur photographers. It is a specialty of manufacture with Ed. Liesegang, in Düsseldorf, and Alb. Peltzer, in Wichrath, and is also made by most of the cellodine-paper manufacturers.

Of foreign makes, the solio paper of the Eastman Company is alone worth quoting.

A sort of calcium paper is also imported from L. Sevaert, Antwerp.

Cellodine paper, both the glazed and the plain, is now more widely bought by amateurs and professionals. The factories preparing this paper are divided into two classes—those that use only the Rives plain paper and those that work the German plain paper. The former have formed a trust, under the lead of the Vereinigte Fabrik Photographische Papiere, in Dresden. The principal factories that have not entered this combine are: Chemische Fabrik, E. Schering, Berlin; Ernst Colby & Co., Zwickau; Rhein Emulsions Fabrik, E. Stolle, Cologne; van Bosch, in Strassburg; Dr. Lüttke-Arndt, in Hamburg; Dr. Opity & Co., in Munich; Walter Münch & Co., in Karlsruhe; van Dyck, in Aix la Chapelle.

Platinotype paper is nearly all furnished by the Platinotype Company, of London, which commands the German market. Only a few of the most prominent photographic establishments produce this paper themselves or use the German article, which is made by Dr. Rich Jacoby, in Berlin. This, however, owing to its excellent quality, is rapidly growing in favor.

As long as bromide paper was little used, the Eastman Company and von Ilford supplied the demand. Aside from makes imported from England, those made by Dr. Just, Vienna; Lumière et fils, Lyons; and Wellington & Ward, England; also the velox paper—are used; but the bulk is supplied by German factories, many of which have sprung up during the last few years, furnishing an excellent article. Among these, the following deserve mention: Dr. Stolger, Berlin; Chemische Fabrik vorm. Schuing, Berlin; Neue Photographische Gesellschaft, Berlin; Dr. Ruebinsam, Berlin; Posseldt, Berlin; Vereinigte Fabrik Photographische Papiere, Dresden; Rhein Emulsions Papiere Fabrik, Cologne; Photographische Gesellschaft, Düsseldorf.

The autotype company, of London, furnishes most of the supplies needed in the line of carbon tissue paper. The firms of A. Braun & Co., Dornach, and F. Haufstaengel, in Munich, are the manufacturers of the domestic article.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *October 10, 1899.*

ARTIFICIAL COAL IN GERMANY.*

I have seen the representative of Mr. George Montag, the inventor of an artificial coal, for which he has applied for letters patent in a number of states. On invitation, I assisted at a trial to demonstrate the combustive properties of the article and observed its ready inflammability and its apparently considerable heating qualities.

Mr. Montag claims that all sorts of earth may be used for his substitute, with the exception of sand and gravel; but I think that only those whose component parts are vegetable or ligneous, as moor peat and turf lands, would be available. The inventor also enumerates among suitable substances various kinds of clay, but I believe with a mental reservation to use these as an admixture with the vegetable soil, for graduating the heating qualities of the coal.

Certain ingredients are mixed with the earth and worked into a homogeneous mass for the purpose of making it inflammable. These ingredients are the inventor's secret; but since his preparation is intended to have the properties of pit coal, their nature can be easily guessed. They are to take the place and produce the effect of the bitumen of the mineral article and must be substances of quick ignition and combustibility, such as pitch, resin, naphtha, or similar products. One hundred kilograms (220 pounds) of such articles may be bought at Mannheim for about \$2; but only 6 to 8 per cent are required for 50 kilograms (110 pounds) of the artificial coal. Including labor and general expenses, the cost for this quantity would be, say, 7 cents; a tract of land bought lately by Mr. Montag furnishes 50 kilograms of earth especially suited for the purpose for 0.5 cent; so that 50 kilograms of the artificial coal will cost not more than 7.5 cents to produce. This calculation is taken from the notes of the inventor. The cheapness will be best illustrated by comparing the prices of the various grades of pit coal, which have run in the last year from 17 to 27 cents per 50 kilograms at this place.

The artificial coal, of a grayish black, is pressed into blocks (briquets) of three sizes, viz: No. 1, $7\frac{1}{4}$ inches long, $2\frac{1}{2}$ inches broad, $1\frac{1}{2}$ inches thick; No. 2, $6\frac{1}{2}$ inches long, 4 inches broad, $1\frac{1}{2}$ inches thick; No. 3, $3\frac{3}{4}$ inches long, 3 inches broad, $1\frac{1}{2}$ inches thick. The blocks are hard and brittle, and when thrown into the furnace, whole or in pieces, they ignite readily and burn briskly.

* This report was obtained at the request of a New York firm, to which Advance Sheets have been sent.

The suggestion that for technical establishments blocks of larger size would be desirable was answered with the statement that forms for making 10-pound pieces were already in preparation.

The result of an examination of the Montag coal by the technical assayers at Karlsruhe showed that it contained:

	Per cent.
Water	14. 79
Ashes	17. 73
Combustible substance.....	67. 48

The heat produced is stated at 5.716 caloric. When assisting at the experiment here, I took away a specimen of the ashes, which I inclose.* It would appear from this that the application of the invention is not yet perfect, and that in mixing the different earths great care must be taken to prevent working in too large a proportion of useless substances.

The ashes apparently contain a great deal of clayish substance; they are excellent to retain heat, but ineffective for producing it.

I also inclose several printed circulars published by order of Mr. Montag.*

P. J. OSTERHAUS,

MANNHEIM, *September 25, 1899.*

Vice and Deputy Consul.

DRIED FRUITS IN GERMANY.

In compliance with the request of the editor of a San Francisco journal,† a Department instruction was sent, under date of August 15, 1899, to the consuls-general at Berlin and Frankfort, asking for information in regard to the prices, etc., of American dried fruits in Germany. The answers follow.

BERLIN.

In compliance with special instructions from the Department, I have to submit the following report concerning the market for American dried fruits in Germany, and the conditions of packing, delivery, etc., which should be observed in making exports of that class to this country. Following the order of inquiry as suggested, the facts may be concisely grouped under the four following heads:

(1) Present jobbing prices of California and Oregon dried fruits in Germany—that is, the rates paid by retailers throughout the Empire to importers of such goods, who are located mainly at Hamburg and Bremen. The latest wholesale circular from Hamburg is

* Sent to correspondent.

† To whom advance proof has been sent.

dated September 18, and gives the following prices at the free port in that city or at Bremen, Antwerp, or Rotterdam, with three months' acceptance or 1 per cent discount for payment on receipt of invoice.

California dried fruits, crop of 1899, brands "Hermes" and "Mercur," per unit of 50 kilograms (110 pounds).

Articles.		Price.	
Hermes:			
Apricots—		<i>Marks.</i>	
Victoria.....	63.00		\$14.99
Brilliant.....	66.00		15.70
White nectarines—			
Victoria.....	45.00		10.71
Brilliant.....	51.00		12.13
Non Plus Ultra.....	53.50		12.61
Yellow peaches (Brilliant).....	41.00		9.75
Silver prunes.....	40.00		9.52
Mercur:			
Royal apricots—			
Extra choice.....	62.00		14.75
Fancy.....	65.00		15.47
Extra fancy.....	68.00		16.18
Hermes:			
Peaches (unpared)—			
Victoria.....	38.00		9.04
Brilliant.....	41.00		9.75
Non Plus Ultra.....	45.00		10.71
Bartlett pears (halves)—			
Brilliant (guaranteed free from San José scale).....	58.00		13.80
Victoria.....	53.00		12.61
White nectarines:			
Brilliant.....	52.00		12.38
Non Plus Ultra.....	55.00		13.09
Prunes to be shipped from California in October and November:			
Packed in boxes of 1½ kilograms (25 German pounds) each—			
30-40.....	47.00		11.18
40-50.....	37.50		8.92
50-60.....	32.00		7.62
60-70.....	28.00		6.66
70-80.....	24.50		5.83
Average lots—			
40-50, 50-60, and 60-70.....	32.00		7.62
50-60, 60-70, and 70-80.....	30.00		7.14
40-50 and 50-60.....	34.00		8.09
70-80, 80-90, and 90-100.....	21.50		5.12
80-90 and 90-100.....	20.75		4.93

(2) Relative standing of dried fruits from the Pacific coast as compared with that from other countries.

In respect to dried apricots, pears, and peaches, it may be said, once for all, that these fruits from the Pacific coast of the United States dominate and control the markets of continental Europe. Nothing comparable to them in point of size, flavor, tenderness of pulp, and general excellence had ever been seen in Europe until they were imported from the United States. They have established

wholly new standards of excellence and created a new market which, if the trade is properly managed, they can hold in future against any probable competition.

In respect to prunes, the Pacific coast holds the call in all the larger numbers, viz, 30-40, 40-50, 50-60, and 60-70 to the pound of dried fruit. For numbers below that grade—viz, 70-80, 80-90, and 90-100 to the pound—the prunes of Bosnia would, in a year of ordinary good crop, come into competition and control the market for the reason that freight and other charges on such low-grade fruits coming from a source so distant as California or Oregon would bring them within the competition of European products.

But the higher grades of California prunes are a revelation to European consumers, being not only cheaper than French prunes of approximate quality, but of such excellence that they are sold in small, ready-made packages and eaten raw as sweetmeats, like candy or caramels. In a season when the Bosnian prune crop should fail entirely, as has sometimes happened, the American prunes even of the smallest grades would control the market in Germany.

France produces very rarely and in only small quantities prunes ranging from 30 to 40 to the pound, and these are almost never exported. Pears come to Germany in small, uncertain quantities from France and Italy, but not sufficiently to affect the prices of Californian pears, which make and control the market in this country.

(3) Present retail prices of Pacific-coast fruits at Berlin are, for reasons that should be well known to the trade at home, abnormally high. This has been generally a poor fruit year in Europe, and the supply at home is so limited that, for example, dried apricots, which last year cost 47 marks per unit of 50 kilograms (\$11.19 per 110 pounds), now command 75 to 85 marks (\$17.85 to \$20.23) for the same quality. The following prices (retail) are given by the leading merchant in this line at Berlin, who sells exclusively fruits and other products of the Pacific coast:

	Pfennigs.	Cents.
Apricots (extra fancy Moorpark).....per pound (0½ kilogram)....	80	= 19
Peaches ("Non plus Ultra").....do.....	75	= 18
Pears (halves), unpeeled.....do.....	60	= 14½
Prunes, "Castle and Hermes :"		
30-40.....do.....	60	= 14½
40-50.....do.....	50	= 12

These prices are, of course, for high-grade fruits, sold in a first-class store which practically controls the local trade in its specialties.

(4) Is there any complaint as to dishonest packing or grading of dried fruits from the United States, and what needs yet to be done to improve the trade and render it stable and permanent?

There has been to my knowledge more or less complaint in regard to packing and assorting American dried fruits, and I have never investigated a case of this kind in which the complaint did not prove to be fully sustained. I examined yesterday the first box of dried apricots from this season's crop, which had just arrived from one of the foremost packing firms in California, a house whose brand on a packing case is usually accepted as a guaranty of quality. On removing the lid, the fruit appeared neatly ranged in layers, the pieces large, firm, uniform in size and color, the dried flesh translucent as gelatin and of fine, aromatic flavor. The box being turned over and the bottom removed, a wholly different picture was revealed. There the fruit had been loosely thrown in, the pieces of all sizes, mainly small, irregular in shape and of all shades of color, from golden brown to deep mahogany, many pieces showing by their form that they had been saved from apricots which had been partially decayed. All were good enough to be eaten; but they were not what the buyer had ordered and paid for, nor what the seller had pretended to sell, and, as the disappointed importer somewhat bitterly remarked, "if this is what we get from a first-class exporter who puts up his own fruit, what may we expect from the jobbers who gather up and export the miscellaneous product of small packers and individual farmers?"

The truth is, and it may as well be stated with all plainness, the dried-fruit industry of the Pacific coast is not yet organized and managed as it should be to achieve the best results and give its European export trade the permanence and stability which it deserves and ought to attain. The fruit farmers of the Pacific slope have before them an unparalleled opportunity, but their fruit has made its market abroad on its own merits, and not by virtue of any especially able or far-sighted management.

Accepting as a basis a consensus of the best expert opinion that can be obtained here, what should be done to perfect and extend the continental European trade is simply this:

(1) Dried apricots, prunes, peaches, pears, and nectarines should be put up in cases containing $12\frac{1}{2}$ and 25 kilograms (27.56 and 55.12 pounds) each. The principal trade here is in the cases of $12\frac{1}{2}$ kilograms.

(2) The fruit so packed should be honestly uniform in color and quality throughout each case of an entire shipment.

(3) A definite general system of grading, with standard names for each quality, should be adopted and adhered to, so that the terms "choice," "fancy," "extra fancy," or whatever names the different grades are given, should be one and the same thing under all circumstances, like numbers in wheat or corn on the grain mar-

ket at Chicago. As it is, these terms are used indiscriminately by some packers, whereas others have a full code of grade names for their own product, the consequence being that such names mean little or nothing to foreign buyers, the "extra fancy" product of one packer being inferior to the "choice" brand of another. It would be of the highest utility—if it were possible—if the export packers of California and Oregon were organized each with a board of control, to inspect and stamp all cases of fruits intended for export, so that the grade name should be an authoritative guaranty of quality. This would add something to the cost, but it could be easily added to the price. It is not so much a question of centimes or pfennigs per pound as of honest, fair dealing and standard grades of quality, under which European importers could and would give large orders with the assurance that they would receive what they intend to buy.

Complaints have also been made that old, left-over dried fruits from the previous year have been steamed, repacked, and shipped to Europe as part of the new crop. To what extent this charge is true would be difficult to say; but if it has ever been done, or any other artifice practiced which is below the accepted standard of business morals, all such methods should be stopped. If it is necessary to steam certain fruits before packing, allowance should be made for the loss in weight which inevitably accrues through drying, even before the case is opened.

Boxes should be lined with neat, white paper and plainly labeled, so that the name of the packer and the variety and grade of the contents can be readily ascertained. Evaporated apples should be packed in cases containing 110 pounds, or 50 kilograms, each.

The duty on dried fruits imported into Germany is 4 marks (95 cents) per 100 kilograms (220.46 pounds); and of the 57,617 tons of such products consumed in this country last year, 13,276 tons came from the United States. At the date of this report, the first dried apricots and prunes of the new crop are arriving, and the demand is far in excess of the immediate supply.

From all that experience has taught, it is plain that Europe will henceforth take and pay fair prices for whatever surplus the fruit growers and packers of the Pacific States can produce; and with their trade once organized, controlled, and properly managed, they can plant and prune and gather the fruits of their favored clime with secure reliance of a ready and responsive foreign market.

FRANK H. MASON,

Consul-General.

BERLIN, *October 17, 1899.*

FRANKFORT.

I have inquired of different agents of American houses and of a prominent retail dealer here, and give their statements below.

Emil Flesch, an agent for several American fruit exporters, says:

American dried fruit brings higher prices here and is preferred to that of other countries, on account of its superior quality. It is sold by American exporters or their agents here for cash before delivery—i. e., upon transfer of the bills of lading. A much larger business could be done if sales were made on sixty days' or three to four months' credit. It would be still better if a large exporting firm or a syndicate of exporters would keep a stock of the fruits here from which to make deliveries to retail dealers, instead of following the present methods of cash sales to jobbers.

Following are the prices (less 1 per cent cash discount) at which I sell below-named goods to jobbers only:

Articles.	Per 100 kilograms (220.46 pounds).	
	Marks.	
Extra fancy Bartlett pears (half).....	118.25	\$28
Fancy Bartlett pears.....	113.25	27
Extra fancy California peaches.....	93.00	22
Fancy California peaches.....	88.00	21
Choice California peaches.....	83.00	20
Extra choice pitted plums.....	93.00	22
Extra fancy white nectarines.....	98.00	23
Fancy white nectarines.....	93.00	22
Extra choice Royal apricots.....	138.25	33
Extra fancy Royal apricots.....	128.25	31
Choice Royal apricots.....	118.25	28

The fruit is packed in boxes, eight of which weigh 100 kilograms (220.46 pounds).

Extra fancy California prunes in 25-pound boxes.

Prunes in metric pound.	Extra fancy, first quality.		Fancy, second quality.		Choice, third quality.	
	Marks.		Marks.		Marks.	
40 to 50.....	78.50	\$18.68	76.00	\$18.08	73.50	\$17.49
50 to 60.....	68.50	16.30	66.00	15.71	63.50	15.11
60 to 70.....	61.00	14.52	58.50	13.92	56.00	13.33
70 to 80.....	56.00	13.33	53.50	12.73	51.00	12.14
80 to 90.....	51.00	12.14	48.50	11.54	46.00	10.95
90 to 100.....	46.00	10.95	43.50	10.35	41.00	9.76

Prices given are for 100 kilograms (220.46 pounds).

Prunes generally sell at 2.50 marks (60 cents) less per 100 kilograms when packed in 50-pound boxes. In sacks containing 85 to 100 pounds, the price per 100 kilograms is 5 marks (\$1.19) lower than figures in column.

I have heard no complaints about defective packing of American-fruit shipments.

Erwin Roelker, of Frankfort, a commission dealer in dried fruit, states:

Oregon prunes, 40-50 and 50-60, in boxes of 25 pounds, sell at 60 to 65 marks (\$14.28 to \$15.47) per 100 kilograms (220 pounds) c. i. f. Rotterdam or Antwerp; while the price for same quantity of California Santa Clara prunes is 70 to 80 marks (\$16.66 to \$19.04). Turkish prunes are much smaller and sell at 35 to 40 marks (\$8.33 to \$9.52) per 100 kilograms packed in boxes. French prunes sell from 75 to 115 marks (\$17.85 to \$27.37) per 100 kilograms. French and Turkish prunes are more popular than California prunes; consequently, the large sizes of the latter must be sold comparatively cheap.

California apricots sell at 100 to 150 marks (\$23.80 to \$35.70), according to quality, per 100 kilograms c. i. f. Rotterdam or Antwerp.

Bartlett pears sell at 80 to 100 marks (\$19.04 to \$23.80) per 100 kilograms c. i. f. Rotterdam or Antwerp.

These fruits and the prices of the same have suffered from the San José scale, and importers rather avoid dealing in them.

M. M. Rapp, a commission dealer in fruits, says:

I have heard of no complaint of the packing or weight of American fruit. It would be desirable if those intended for export to Germany were packed in boxes weighing 12½ and 25 kilograms (27.56 and 55.12 pounds), and in sacks of 75 kilograms (165.35 pounds) net.

French and California prunes do not enter into general consumption, owing to their high price. Turkish prunes supply the popular demand for cheap goods. For aristocratic palates, the French prune is the favored article, but the California prune is rapidly becoming its rival.

Henry Simon, a retail grocer of Frankfort, states:

The following are my purchasing and selling prices:

Articles.	Purchase price.		Retail price.	
	Marks.		Marks.	
Apricots..... per 100 kilograms...	127	\$30.23	135	\$32.13
Prunes (40 to 50 in pound)..... do.....	88	20.94	95 to 96	\$22.61 to 22.85
Evaporated apple rings.....per 50 kilograms...	42	10.00	47	11.19
Pears per 100 kilograms...	116	27.61	125	29.75

French prunes of present crop are offered 40 to 50 pieces per pound, at 148 marks (\$35.22) per 100 kilograms; 50 to 56, 124 marks (\$29.50); 60 to 65, 109 marks (\$25.94); and 70 to 75, 86 marks (\$20.47) per 100 kilograms. Turkish prunes, 70 to 75, at 53.50 marks (\$12.73); 80 to 85, at 45.50 marks (\$10.83); 95 to 100, at 40.50 marks (\$9.64); and 110 to 120, at 37 marks (\$8.81) per 100 kilograms, delivered at Frankfort.

The California is preferred to other American fruit, but some that have been shipped from Baltimore also proved very popular.

George Schepeler, the leading grocer of this city, says:

American dried apricots, peaches, pears, and evaporated apples have pushed other dried fruit out of this market, because their quality is superior and the price in general is lower. There is hardly any European dried fruit of this kind now offered for sale. The case is different with prunes; the Bordeaux (French) article stands at the head; next come Bosnian (Turkish) prunes, and then the American.

I pay for French prunes, from 44 to 195 marks (\$10.47 to \$46.41) per 100 kilograms; for Bosnian prunes, from 23 to 74 marks (\$5.47 to \$17.61) per 100 kilograms. American prunes can not well compete with these on account of higher cost. I sell Bordeaux prunes at from 55 to 260 marks (\$13.09 to \$61.88) per 100 kilograms; Bosnian prunes at 40 marks (\$9.52) per 100 kilograms.

Low-priced small prunes are used for cooking and stewing, and sell from 12 to 37 pfennigs (2.8 to 8.8 cents) per pound; the larger and higher priced grades are eaten raw and sell from 1 to 1.20 marks (23.8 to 28.5 cents) per pound.

I pay for American apricots 135 marks (\$32.13) and sell them at 220 to 240 marks (\$48.36 to \$57.12) per 100 kilograms. I pay for American pears 125 marks (\$29.75) and sell them at 190 marks (\$45.22) per 100 kilograms. I pay for American peaches 125 marks (\$29.75) and sell them at 160 (\$38.08) per 100 kilograms. I pay for Bosnian prunes 70 marks (\$16.66) and sell them at 80 marks (\$19.04) per 100 kilograms. I pay for American evaporated apples 22.50 to 26 marks (\$5.36 to \$6.19) per box of 22½ kilograms (49.6 pounds) net fruit.

Our system of weights and measures is one of the most serious hindrances to our export trade.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *September 12, 1899.*

GERMAN TEXTILE FACTORIES IN AMERICA.

German papers discuss and copiously comment on the late news that the firm of Bruhm's Soehne, of Gera, one of the largest textile-manufacturing concerns in Germany, is now about to establish a factory and branch house in the United States. One of this firm's partners, Mr. Henry Bruhm, has been in the United States for some time past to carry out this purpose. It is confidently expected that this enterprise will be as successful as those of the firms of Stöhr & Co. (worsted-yarn spinners), which recently established a branch factory in Passaic, N. J.; Georg Hirsch, of Gera, and Arnold, of Greiz, which also have factories at Passaic. These German ventures in the United States have been very profitable. A report is now current that manufacturers of Gera have formed a syndicate aiming at the erection of new worsted-textile factories in the United States. News also comes from Rhenish Prussia (the Crefeld and Barmen textile-manufacturing district) that manufacturers of silk and woolen textiles there purpose to erect branch factories in the United States.

The straits in which this German industry has been placed by the partial shutting off of the important American market, owing to the working of the tariff, has necessitated this new departure.

For our country, this move is of much greater importance than appears on the surface. It not only means new capital and skilled labor, whereby the country's population and the national wealth is

increased, but it strengthens our capacity to compete in the world markets with the very country from which this skill and monetary force has been drawn. This truth is better known and more keenly felt by German manufacturing circles and their organs of the press than by our own people. This transfer of manufacturing and financial power is the handwriting on the wall telling of the coming decline of European nations as purveyors for the outside world, and the rise of the vigorous and ingenious nation of the Western Hemisphere to succeed them.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *September 12, 1899.*

WORLD'S OUTPUT OF RAW SILK IN 1898.

The Silk Producers' Association of Lyons has just published statistics of the world's product of raw silk for 1898. The report gives in detail the product of the various Departments of France and a general statement of production in Italy, Spain, Austria-Hungary, the Levant (communicated by the French Chamber of Commerce of Constantinople), the Balkan provinces, the Island of Rhodes, Greece, the Caucasus and Trans-Caucasus, Persia, Turkestan, and the extreme Orient. Under this caption are included exportations from China, Japan, and the East Indies.

The quantity of seeds put to hatch in France (seeds means silkworms' eggs), or hatched in France, was 184,984 ounces; this was 13,903 ounces less than in 1897, and 49,510 less than the average for the ten preceding years. This is a continuation of the decline in production which has marked the last ten years. In 1888, the total ounces of eggs placed for hatching was 275,224. The average for the decade was 234,494 ounces. In spite of the fact that the Government gives the silkworm breeders a bounty of 5 cents a pound, the production is decreasing. The years 1897 and 1898 are the lowest of the decennial period. The production was diminished in these two years by heavy frosts.

The official figures show the total product of 1898 to have been 6,893,033 kilograms (15,196,380 pounds), against 7,760,132 kilograms (16,821,390 pounds) for 1897. The world's production for 1898 is below the average for the past ten years—a decline of a little over 11 per cent as compared with 1897.

The average production of fresh cocoons for an ounce of seed perceptibly declined in 1898. It was 37 kilograms (81.5 pounds), while the average for 1897 was 39 kilograms (85.9 pounds) and that for 1896 42 kilograms (92.5 pounds).

The quantity of cocoons reserved for seeding in the Departments of the Var, the Hautes, and Basses-Alpes, and Corsica is estimated at 400,000 kilograms (881,840 pounds).

The production of raw silk in France in 1898 was 550,000 kilograms (1,212,530 pounds), only about one-sixth of what is necessary for her silk manufactories. The number of producers of raw silk in France was 10,000 less in 1898 than in 1897.

In Italy, 895,500 ounces of cocoons were hatched. They were crossed races of yellow Chinese cocoons, which are rapidly increasing in the market. The production of fresh cocoons rose to 39,612,000 kilograms (87,304,000 pounds). This production is 7 per cent larger than that of 1897 and nearly 3 per cent inferior to the average of the six preceding years. The average product of an ounce of seed rose to a little over 44 kilograms (97 pounds), the highest figure for any of the ten preceding years except 1896.

The production of raw silk aggregated 2,992,000 kilograms (6,596,163 pounds), 76,000 kilograms (167,500 pounds) in excess of 1897 and 271,000 kilograms (597,400 pounds) less than the average of the ten preceding years.

The world's production for the year was 15,687,000 kilograms (34,583,555 pounds), tabulated as follows:

Country.	Quantity.	
	<i>Kilograms.</i>	<i>Pounds.</i>
Spain and Austria.....	324,000	714,290
France.....	550,000	1,212,530
Italy.....	2,992,000	6,596,161
Asia.....	1,479,000	3,260,603
Extreme Orient (exportations).....	10,342,000	22,799,971
Total.....	15,687,000	34,583,555

JOHN C. COVERT,

LYONS, *October 3, 1899.*

Consul.

SAMPLES OF UNITED STATES GOODS IN NICE.*

For many years, thousands of printed circulars and catalogues have been sent to this city, with no practical results. This indicates that if the very favorable conditions existing in this part of France for the creation and development of an export trade are to be taken advantage of in the interest of our manufactures, it could be done only by an individual firm which would be willing (a) to deal exclusively in United States products, (b) to submit for a time to hard

* Extracts from a letter to a Massachusetts firm, which has received the original.

work with little or no remuneration, and (c) to be prepared to expend a considerable sum in advertising, printing, exhibiting, and traveling.

Having mentioned my plan to a commission merchant here, who, together with two other men speaking the languages and dialects of the Rivas, appeared prepared to take up the matter seriously, it was resolved to make the attempt in the following form:

A shop, of considerable dimensions and centrally located, was taken for the purpose of exhibiting samples from American manufacturers at a nominal cost. The plan of action was to examine all catalogues, discarding such as described articles that could not possibly find a market here; and, in case of those that presented a greater or less chance of success, to ask the manufacturer to send a small sample for exhibition. Finally, to work up a trade in each article without loss of time, and where, for special reasons, success could not be attained, to dispose of the sample sent at the best possible figure and to remit the proceeds to the sender.

In order to further encourage these people to successful action, I agreed to supervise the operations of the concern and to aid it by every means in my power. They have now been at work for nine months, and have not succeeded in obtaining a single sample for exhibition. The replies are, "We do not wish to consign; we wish to sell," and the concern has on hand hundreds of catalogues of articles in which there are strong probabilities of trade. I can well understand that United States manufacturers do not wish to send consignments to an unknown market, nor should they. On the other hand, goods can hardly be sold for cash simply from a cut or design. The sending of a single sample to a concern prepared to do all the exhibiting and pushing, having all the elements to achieve success wherever success is possible, would not constitute a "consignment," and would appear to me to be by far the most economical plan for opening up trade in new territories. In view of the lack of success, the concern had decided to give up their present large quarters; but I am so convinced that once a beginning is made very considerable success may be attained, that I have offered them out of my own pocket the equivalent of six months' rent to induce them to continue their efforts.

NICE, *September 20, 1899.*

ATTILIO PIATTI,
Vice-Consul.

AMERICAN PETROLEUM AT GHENT.

On the 20th of September, the steel-screw tank steamer *Lumen* from Chester, Pa., arrived at this port with a cargo of refined petroleum in bulk and in barrels. The arrival created quite a stir in maritime shipping circles, as it was the largest steamer which has ever entered this port. Upon her arrival, there was a large gathering of people, the American colors were hoisted, saluted by the firing of guns, and heartily cheered by all present, irrespective of nationality.

The length of the boat is 294 feet 6 inches; beam, 37 feet 6 inches. On entering the Terneuzen Canal from the North Sea in passing through the locks, her length was such that she had just 1 inch to spare. The depth of the Terneuzen Canal not admitting ships with a draft greater than 18½ feet, and the *Lumen* drawing 23 feet, it was found necessary to unload on lighters a part of her cargo of oil in barrels, so as to reduce her draft sufficiently to enable her to pass through the canal to Ghent.

Her cargo consisted of 5,219,605 pounds of oil in bulk and 3,014 barrels of oil weighing 1,240,862 pounds, a total tonnage of 6,460,407 pounds.

The consignment was for the Ghent Petroleum Company and marked an important commercial event for this city, as it was the first oil in bulk received in this port and also opened an entirely new industry. There is only one other point in Belgium at which oil in bulk is received, viz, Antwerp. This corporation has constructed steel oil tanks, into which the oil is pumped from the ship through a pipe line. Another steamer is due on the 20th of October, and from that date there will be monthly arrivals of tank steamers with petroleum from Chester.

It is much to be regretted that these steamers do not fly the American flag; they are British bottoms.

RICHARD LE BERT,

GHENT, October 4, 1899.

Consul.

SALE OF MUSICAL INSTRUMENTS AND BOOKS IN GHENT.

My attention has been called to a contemplated sale of the late C. C. Snoeck's private museum of musical instruments and library of music, located at Ghent. This collection was the life work of Mr. Snoeck, and was commenced in 1854. The heirs are now considering the sale of this property. It is said that this is one of the finest and

most important collections of string and reed instruments and musical libraries in Europe.

The collection of flutes is complete and that of clarinets and violins almost so; of pianos, there are about forty. The instruments date from the sixteenth century. The catalogue, as published in 1894, describes one thousand one hundred and forty-five instruments of two hundred and twenty-five different kinds. The Flemish collection is not included in the catalogue, and consists of about four hundred instruments, chiefly string and reed. There are many parts and appliances of instruments not catalogued. The musical library consists of the theoretical history of musical instruments and the works treating of music, practical, religious, symphonic, parlor, piano, and organ, string and wind instruments; biographies, etc. These date from the earliest periods of music; many are in manuscript, written prior to the knowledge of print. The library is now being catalogued and comprises many thousands of volumes.

No part of the museum or library will be sold separate; it must be purchased in whole. The Berlin Conservatory of Music has had a representative here, who devoted four weeks to the examination of the museum and library. I am informed that the Russian Government is considering sending a representative to make an examination.

I consider it highly important to call the attention of our wealthy music-loving citizens to this opportunity of procuring so complete and interesting a museum and library.

RICHARD LE BERT,

GHENT, *October 20, 1899.*

Consul

BELGIAN LIFE-SAVING APPARATUS.

Mr. Hubert de Wilde, of Ghent, is the inventor of a life-saving collar. Its merit was demonstrated at the swimming school in this city a few days ago. Comparison was made between this collar and the life buoys in common use as to their respective bearing power, rapidity of adjustment, freedom left to arms and legs, and general convenience. From my observation, I would judge it to be far superior to either the life buoy or cork jacket. Its bearing power was equal to, if not greater than, that of the buoy. The body is submerged with the head and neck only exposed, which prevents exposure and chilling and, as a general consequence, congestion. It is impossible to capsize, which has often occurred with the buoy; the arms are left perfectly free, and, what appears to be most important, its adjustment is instantaneous. It is so simple that a child 7 years of age can put it on without assistance. It can readily be adjusted while one is in the water.

The invention consists of a cork collar having an exterior diameter of $16\frac{1}{4}$ inches and an interior diameter of $5\frac{1}{8}$ inches; the neck opening has a circumference of $18\frac{1}{4}$ inches and is composed of two half collars fastened together with a hinge, in which there is a very strong spring, destined to maintain the collar always closed and firm; the opening is opposite the hinge. On each side of the opening there is a small holder made of oak, 3 inches in height and 2 inches in diameter, securely fastened. When pressure is exerted on the two holders, the collar spreads open and allows the head to pass into the collar. On letting go of the holders, the collar clasps itself automatically.

The collar is formed of thirty pieces of cork, each piece having the form of an isosceles triangle, with angles rounded, of which the base is $4\frac{3}{4}$ inches and the height $5\frac{5}{16}$ inches. The points are directed towards the interior, which gives the collar an elevation at its periphery of $4\frac{3}{4}$ inches, while at its interior there is a thickness of $1\frac{3}{16}$ inches. The pieces are cut radially and are strung on two heavy steel-wire stems concentrically riveted to the folding shutters of the hinge.

The weight of the apparatus is about $5\frac{1}{4}$ pounds and its displacement of water about 12 quarts; consequently, its ascensional strength represents constantly from 18 to 20 pounds of iron.

Herewith inclosed please find several illustrations on the subject, as taken from one of the Ghent daily journals.*

RICHARD LE BERT,
Consul.

GHENT, *October 13, 1899.*

NEW COMMERCIAL DEPARTMENT IN GREAT BRITAIN.

The London Daily Mail announces in the following way the opening of the new commercial department of the British Board of Trade:

The commercial intelligence office—the new department of the Board of Trade which is to supply merchants and manufacturers with information as to trade and markets all over the world—was opened yesterday.

The department is housed in temporary offices at 50 Parliament street. In charge of it is Mr. Thomas Worthington, whose recent reports on the trade of South America attracted wide attention. The commercial intelligence office is an experiment, the object being to learn all that is to be learned about markets and tariffs and competition and rates; to tabulate it, to edit it, and to put it in order; and to place it promptly at the disposal of the merchant to whom it may be of use.

Besides collecting information from colonies and India in the ordinary way, the

* Filed for reference in Bureau of Foreign Commerce.

department, it is expected, will send special missions to foreign countries as occasion requires or procure special reports by experts upon particular trades or industries, subject to the sanction of the Foreign Office. It will arrange for the exhibition of patterns and samples. It will bring together, from different parts of the world, information bearing upon particular industries and the markets with which they are concerned.

All this information will be distributed, frequently free of cost, to chambers of commerce and other public bodies, and at a small cost to manufacturers, merchants, and other private persons. But the office may in its wisdom "withhold from general circulation such information as may be more suitable for communication confidentially to chambers of commerce and other associations."

The department should meet two classes of exception to the present system—that of traders who say the consuls are too busy on the diplomatic side to devote a proper attention to trade, and that of the consuls who say that the traders worry them with futile inquiries and never read their reports.

MARSHAL HALSTEAD,

BIRMINGHAM, *October 25, 1899.*

Consul.

BRITISH IMPORTS OF IRON ORE.*

According to the Board of Trade returns, the quantity of iron ore imported into the United Kingdom for the six months ended June 30, 1899, was:

From—	Quantity.	Value.		Average price per ton.
	<i>Tons.</i>			
Spain.....	3,202,879	£2,334,170	\$11,359,238	\$3.54
Other countries.....	435,629	389,846	1,895,185	4.35
Total.....	3,638,508	2,724,016	13,254,423	3.64

Middlesbrough is one of the ports where the largest quantity is imported, and the other principal ports are Newport, Glasgow, Cardiff, and Newcastle-on-Tyne.

According to the commissioners' return for the year 1898, the quantity of iron ore imported into River Tyne during that year was as follows:

From—	Quantity.	From—	Quantity.
	<i>Tons.</i>		<i>Tons.</i>
Coastwise.....	105,116	Denmark and Iceland.....	2
Belgium and Holland.....	25	Austria, Turkey, and Greece.....	2,056
Italy.....	5,347	Algeria, Egypt, etc.....	97,641
Spain.....	596,240	United States.....	22
Norway.....	158	Total.....	827,835
Sweden.....	21,228		

This was an increase of 41,217 tons over the year 1897.

* This report was made in answer to inquiries by a Massachusetts firm, to which Advance Sheets have been sent.

On referring to the custom-house entries for a few months, we find that the largest proportion of iron ore imported into the Tyne is from Bilbao, the other Spanish ports of shipment being Santander, Garrucha, and Carthagena. Some cargoes are reported from Beni-saf, on the coast of Algeria; also from Elba, in the Mediterranean, and one cargo from Daiquiri, in the Island of Cuba. Iron ore is also shipped from Lulea, Sweden, a considerable portion of this ore being sent to Rotterdam.

At present, the price of iron ore is considerably above the average, owing to the great demand in the iron trade and the high rates of freight from Bilbao and other Spanish ports. The present price varies from \$3.89 to \$4.38 per ton, delivered at Tyne or Middlesbrough. The ore is generally sold on a basis of 50 per cent of oxide of iron per ton and a difference in the price of about 8 cents per unit allowed or charged for the ore below or above this strength.

We understand that the Spanish sellers do not guarantee strength when selling to English buyers, and as the ore is sold here according to strength, the risk is taken by the English purchasers.

The ore is generally sold delivered at the works of the iron makers, if these are adapted to receive the ore from the ocean steamers, or, if inland, delivered at the nearest railway dock. For example, I understand that at Palmer's works, at Jarrow-on-Tyne, the ocean steamers discharge at the works, and ore for the Consett Iron Company (whose works are situated about 18 miles from Newcastle) is delivered at Tyne dock, at the entrance to the River Tyne.

The present rate of freight from Bilbao to Middlesbrough is about \$1.82 per ton, and to the Tyne \$1.58 to \$1.64 per ton, and the outward rate of freight from the Tyne to Bilbao is \$1.03 to \$1.09 per ton for coals and \$1.58 for coke.

The coals usually shipped from Tyne to Bilbao are Durham unscreened and Durham small coals, the present price of the former being about \$2.43 per ton and the latter about \$2.07 per ton. The coke is usually Durham foundry, the present price of which is about \$5.36 to \$5.60 per ton. Prices of coals and coke at present are considerably above the average.

HORACE W. METCALF,

NEWCASTLE-ON-TYNE, *October 16, 1899.*

Consul.

NEW DRY DOCK AT CARDIFF.

Cardiff has long been known as the first port in the world for outward-bound tonnage. It is also one of the foremost ports for ship repairing. In no other do we find so many up-to-date dry docks; in no other do we find greater volume and value of business. The development in the dry docks at Cardiff is now watched with profound interest by shareholders, shipowners, and merchants generally.

The management of the Bute Dry Dock Ship Building and Engineering Company has introduced an entirely new principle in connection with their enterprise. Owing to the increasing length of steamers, the company, large as its dock is, has often found it impossible to deal with two large ships at the same time. It has frequently happened that a ship requiring extensive repairs to her bottom has monopolized the whole of the dock, though actually only about half its length. This statement may seem contradictory, but the explanation makes it simple enough. The ship may run past the caisson by a few feet, and thus the lower portion of the dock is rendered useless, because another vessel could not be let in without flooding the one which is being repaired. Thus, the dock may be robbed of nearly half its capacity. When such conditions prevail, work has to be handed over to a rival dock. It is obvious that the remedy for this trouble is to provide two docks.

Here two serious considerations arise—the expenditure involved and the space required. The directors of the Bute dry docks have found it impossible to eke out sufficient land on their estate to make a new dock. This difficulty has perplexed the company more than the question of cost. Mr. Good has mitigated the difficulty by planning something like a half dock, leading off the dock they now have. Stripped of all technical verbage, the plan is this: Excavations are being made on the office side of the present dock to half its depth, and the bottom and sides concreted and stoned. The distance between the blocks on the bottom of the present dock and the bottom of the half dock will be about 16 feet. The entrance to the present dock is from the Roath Basin, consequently the level of water is always about the same. A ship requiring extensive repairs to her bottom will be brought into the present dock in the customary way; water will then be pumped in to a height sufficient to haul her broadside on to the blocks placed in the half dock. At such time there would be 13 feet 6 inches of water over the blocks in the half dock, and as the mean draft of an ordinary cargo boat on an even keel is about 11 feet, it will be clearly seen that there will be 2 feet and over to spare. The water can be reduced by the opening of sluices. A ship thus placed on the blocks of the half dock would

remain dry, while vessels passed in and out of the present dock, for painting or other work. The new wing, of course, can be used for any purpose the present dock is put to, and will undoubtedly prevent it from being obstructed in any way. The successful completion of this important undertaking will mark a new era in the history of dry-dock extension under straitened circumstances. This new dock will be 400 feet long by 75 feet wide. The company anticipates that the new addition will increase its accommodation and earning power by 50 per cent. The estimated cost is £25,000 (\$121,600). The contractor has agreed to complete the work in six months. I hope that this idea can be utilized by some of our American shipping interests which are hampered for lack of accommodations.

DANIEL T. PHILLIPS,

CARDIFF, *October 10, 1899.*

Consul.

WOOL PRICES IN LONDON.

The rise of prices in the wool market begins to cause general anxiety in Germany. Many manufacturers here find difficulty in executing their spring orders, because the wholesale houses will not give the advanced prices demanded by the manufacturers. The latter have not even based their calculations on the prices ruling at the September London wool sales. The wholesale dealers are of the opinion that they can not command or pay higher prices for qualities which they have been running for years, while manufacturers can no longer deliver at the old rates. Sales can be effected only on the basis of the new quotations. The wholesale houses believe that the prices of wools will go still higher, or in any event not retrograde from those now ruling. The consequence of this is that at present small orders are given, and even these can be obtained only under the most exacting conditions.

Although the stock offered at the London wool auction was large, the quality was not entirely satisfactory; but the exceedingly animated tone of the market was not influenced thereby. The competition was keen, especially on the part of England; whereas the Continent, and more particularly Germany, kept in the background. There soon arose an increase on July values of 10 per cent for Australia merinos, and this was most noticeable in the good middle qualities. Crossbreds consisted mostly of pelt wools; the fine qualities, under strong competition, rose from 10 to 15 per cent, whereas coarse and low-class qualities only advanced $7\frac{1}{2}$ to 10 per cent at the outside. Cape wools, of which the assortment was both small and inferior in quality, also showed a rise of 10 per cent. Nearly all greased and scoured wools were taken by England.

During the year 1898, the rise in prices of wool was $7\frac{1}{2}$ to 10 per cent; at the January wool auction, 1899, the rise was 5 to $7\frac{1}{2}$ per cent; at the March auction, $7\frac{1}{2}$ to 10 per cent; at the May auction, 20 to 25 per cent; at the July auction, 5 to $7\frac{1}{2}$ per cent; at the September auction, 10 to 15 per cent; so that the rise in prices as against 1898 runs from 55 to 75 per cent.

The prices obtained were:

Description.	On December 31, 1898.		In September, 1899.	
	<i>Pence.</i>	<i>Cents.</i>	<i>Pence.</i>	<i>Cents.</i>
Good average scoured comb.....	17 to 18	34 to 36.54	24 to 25	48.66 to 50.69
Sydney average greasy comb.....	$7\frac{1}{2}$ to $8\frac{1}{2}$	15.2 to 17.26	13 to 14	26.39 to 28.42
Crossbred greasy (fine).....	10 to $10\frac{1}{2}$	20.3 to 21.5	13 to 14	26.39 to 28.42

The cause of this rise in prices lies in the reduced shearings. Whereas 1,582,719 bales were sent from Australia in 1895, she only delivered 1,266,224 bales in 1899, in spite of the fact that the demand has constantly increased and the consumption grown much larger.

GEO. SAWTER,

GLAUCHAU, October 2, 1899.

Consul.

RAILWAYS OF SWEDEN.

There were, at the close of 1898, 3,676 kilometers (2,284 miles) of railway owned and operated by the Swedish Government. The gross income amounted to 37,823,807 crowns (\$10,136,780), which shows an increase, as compared with 1897, of 1,721,649 crowns (\$461,402), or about 4.77 per cent.

On account of the increased expense in operation, repairs, etc., the net income was not as large as in 1897. The net earnings are set down at 14,507,944 crowns (\$3,888,129) for 1898, or 241.46 crowns (\$65) less than the year preceding.

Since the commencement of the State's control of the principal railway lines, dating from 1856, the gross earnings have amounted to 611,339,208 crowns (\$163,838,908), and the operating expenses to 391,765,687 crowns (\$104,993,204).

The casualties for the last year numbered 205; 49 persons died or were killed, while 157 were merely injured. There were struck by the trains 30 deer, 6 horses, 18 cows, and a few sheep.

The pay roll contains 6,494 names. The traffic has at times made it necessary to add to the regular force, and there have been as many as 7,830 persons employed.

The fund held by the railway committee for pensions for the servants of the railway who have been retired on account of age or injury amounts to 8,515,538 crowns (\$2,282,164), from which was obtained

an income of 929,451 crowns (\$249,093). The fund for the widows and children of deceased employees amounts to 7,758,280 crowns (\$2,079,219), and this yielded an income of 686,670 crowns (\$184,028). The disbursements from the two above-mentioned funds were, respectively, 587,586 crowns (\$157,473) and 208,434 crowns (\$55,860).

The rolling stock consists of 502 locomotives, 428 baggage cars, 892 coaches, 3 dining cars, 45 postal wagons, 6 combined coaches and baggage, 21 prison vans, 216 flat cars, and 12,161 freight cars.

EDWARD D. WINSLOW,

STOCKHOLM, *October 4, 1899.*

Consul-General

EUROPEAN SUGAR PRODUCTION.

Mr. Giesecker furnishes the following table of comparison of the sugar industry for the years 1899-1900 and 1898-99:

Country.	Area sown.	Raw sugar produced.	
		1899-1900	1898-99.
	Hectares.	Acres.*	Tons.
France.....	255,542	631,000	910,000
Belgium.....	58,136	143,000	230,000
Holland.....	46,900	115,000	170,000
Germany.....	428,142	1,057,000	1,830,000
Austria.....	322,200	795,000	1,015,000
Russia.....	482,205	1,191,000	880,000
Sweden.....	26,418	65,000	100,000
Denmark.....	14,000	29,000	55,000
Other countries.....	17,000	42,300	60,000
The whole of Europe.....	1,650,633	4,068,000	5,250,000
1889-1899.....	1,558,918	3,850,527	4,885,000

* In round numbers.

These figures indicate an increase of 5.88 per cent in the crops sown this year when compared with that of last year; the increase in beet root for the sugar industry will probably amount to 18.18 per cent. While the increase in sugar production may be estimated at 7.5 per cent, the mean yield for industrial purposes can be estimated at only 12.5 per cent, against 13.75 per cent for last year.

Climatic conditions may change the above estimate, as well for the harvest as for the industrial yield, and these figures must be regarded as provisional.

Mr. Czarnikow, in his circular on the yield of beet root and the sugar industry, states:

While it is too early to form an estimate of the yield, the general opinion is that there will be a surplus of about 500,000 tons if the favorable weather continues.

The general tone of the market, although fluctuating a little, denotes confidence, and the prices at present are considered normal, even for a good harvest.

The official report of October 13 gives the following table for this region:

Description.	1899-1900.	1898-99.
Mills working.....number...	200	84
Beets worked.....tons.....	257,152	76,711
Production.....do.....	24,205	7,168
Temporary admission.....do.....	9,773	1,821
Exports.....do.....	4,428	3,793
Stock at end of September.....do.....	175,618	85,516
Decrease over end of August.....do.....	32,657	44,754

W. P. ATWELL,
Consul.

ROUBAIX, October 17, 1899.

RUSSIAN SUGAR PROSPECTS.

Consul Heenan sends from Odessa, October 4, 1899, a statement of the condition of the beet-sugar crop and its probable yield for the season of 1899-1900, as follows:

Statement regarding the sowings of beet root made from the particulars furnished by the factories up to September 1-13, 1899.

Province.	Number of factories in operation.	Total area of first sowings.	Percentage destroyed.	Condition of remainder.		Anticipated harvest of beets.	
				Good.	Unsatisfactory.	From total area.	Per desastine (2,697 acres).
		Acres.	Per cent.	Per cent.	Per cent.	Pounds.	Pounds.
Kief	72	350,864	5.3	74	26	4,168,277,073	33,880
Volhynia.....	15	72,457	1.2	80.8	19.2	939,874,601	37,455
Podolia	51	288,382	6.7	69.4	30.6	3,367,363,215	33,804
Bessarabia.....	1	2,910	21.1	70.6	29.4	32,500,800	38,235
Cherson.....	2	21,004	10.9	92.7	7.2	246,644,960	35,591
Kursk.....	21	120,178	2.3	85.3	14.7	1,711,807,819	36,639
Poltava	3	10,772	6.4	88.8	11.2	119,798,815	32,075
Kharkof	26	132,272	2.5	86.2	13.8	2,003,575,337	41,951
Voronezh	7	25,950	7	86.5	13.5	267,304,274	29,926
Orel.....	3	8,196	2	74.8	25.2	99,420,669	33,418
Samara	2	7,138	1.2	96.2	3.8	92,128,934	35,256
Tambov.....	4	15,985	.....	80.6	19.4	200,230,568	33,833
Tula	1	3,142	.....	85.9	14.1	20,875,760	26,524
Chernigov	13	49,599	1.5	85.9	14.1	636,037,659	35,144
Warsaw	20	58,786	1.9	68.1	31.9	799,017,723	37,412
Kalish	4	9,160	3.5	71.7	28.3	141,582,657	43,262
Kielce	2	6,763	.....	50	50	92,269,771	36,834
Lomza	2	3,410	7	60.1	39.9	41,135,179	34,978
Lublin.....	10	26,241	0.5	86.3	13.7	437,576,904	45,252
Petrokovo.....	2	4,832	6.4	52.4	47.6	48,794,534	29,113
Plotak.....	4	9,549	2.5	62.4	37.6	120,447,242	34,921
Radom.....	2	6,420	3.7	97.2	2.8	115,991,000	40,651
Seidlec.....	1	3,320	.....	73.2	26.8	48,681,865	39,589
Total	268	1,146,330	4.3	77	23	15,761,338,109	35,700

For 22 factories (5 in Kief, 1 in Volhynia, 3 in Podolia, 1 in Kursk 1 in Poltava, 3 in Kharkof, 1 in Chernigov, 1 in Voronezh, 2 in Warsaw, 2 in Lublin, 1 in Kielce, 1 in Seidlec), from which no particulars had been received up to September 1-13, 1899, the number of dessiatines cultivated has been taken according to information received up to July 1-13 of the present year, and the quantity of harvest (estimated) on basis of averages for the neighboring areas near said factories.

Last year, 1898-99, from the particulars furnished by the factories up to October 1-13, 1898, from 401,313 dessiatines (1,083,425 acres) sown with beet root, then remaining, there were expected 357,753,534 poods (12,919,195,620 pounds), or 891.4 poods (32,190 pounds) per dessiatine; in reality, the quantity gathered was 368,632,200 poods (13,312,046,006 pounds), or 917.2 poods (33,122 pounds) per dessiatine.

In a report dated September 14, Mr. Heenan says:

The latest advices indicate an extraordinary yield in the crop of beet root in Russia this year and a large increase in the production of sugar. The Russian Government fixes the quantity for home consumption and the maximum price for the same. The quantity of sugar to be kept in the reserve stock is also fixed by the Government, and this reserve can not be used except under direct instructions from the Minister of Finance. The quantity allowed for export is also fixed by the same authority, and the procedure is laid down in great detail. The statistics for the past three years, including the estimates for 1899-1900, may be of interest. They are as follows:

Description.	1897-98.	1898-99.	1899-1900.*
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Sugar produced.....	1,656,000,000	1,800,000,000	1,872,000,000
Home consumption.....	1,116,000,000	1,188,000,000	1,200,000,000
Reserve	90,000,000	108,000,000	108,000,000
Export	450,000,000	504,000,000	564,000,000

* Estimated.

These figures show both increased production and increased consumption in the country itself. Estimating the population of Russia at 130,000,000, the quantity of sugar consumed per capita would be as follows: Season 1897-98, 8.4 pounds; 1898-99, 9.1 pounds; 1899-1900, 9.2 pounds. The price of sugar for home consumption was fixed by the Minister of Finance, for the periods above mentioned, at about 6½ cents per pound. Whenever an effort was made by the manufacturers to sell at a higher price than that fixed by the Government, the Minister of Finance at once threw the quantity of sugar held in the reserve stock on the market, with the result that prices at once fell to the Government limit and even below it.

Should the estimate for 1899-1900 prove correct, a lower price will doubtless be fixed for sugar consumed in the country.

The area sown in beet root in the province of Kief in 1898 was 311,982 acres, which yielded 1,500,768 tons of beets, from which was manufactured 167,975 tons of sugar, or 1,075 pounds per acre. The area sown in beet root in the province of Volhynia in 1898 was 62,076 acres, which yielded 330,671 tons of beets, from which was manufactured 39,694 tons of sugar, or 1,278 pounds of sugar per acre. The area sown in beet root in the province of Podolia in 1898 was 254,471 acres, which yielded 1,330,000 tons of beets, from which was manufactured 151,862 tons of sugar, or 1,111 pounds of sugar per acre. These three provinces have a largely increased acreage sown with beet root this year. This increase prevails in nearly all of the provinces.

RESOURCES OF RUSSIA.

The Chemnitz Tageblatt recently published an article on the wealth of Russia, from which I take the following figures:

Its 8,644,100 square miles of territory extend over one-seventh of the earth's surface—only 3,000,000 less than the entire British Empire. Its waters cover 293,018 square miles. It has fifteen souls to every square mile, or 130,000,000 inhabitants. One-twelfth of the world's population pays tribute to the Czar. It has 11,000,000 men able to fight. It can send 1,255,300 men into the field in a few days and 1,000,000 a few days later. Its total prepared fighting force is 2,500,000 men and 497,415 horses. The Government owns 16,651 miles of railroad; private parties, 8,000 miles. It has a fleet consisting of 23 battle ships, 14 coast defenders, 16 cruisers, 28 cannon boats, and 96 torpedo boats. The marine forces are made up of 1,249 officers, 326 engineers, 38,000 men. Its commercial marine consists of 522 steamers and 2,135 sailing vessels. The river shipping has a fleet of 20,000 ships, manned by 90,350 men.

Russia can be practically independent of the outside world for food, since the opening up of Siberia's grain fields. The export of grain last year was 300,000,000 quarters. Famine, once almost unavoidable, is now limited to one or two districts. Once the railroads reach the interior of these, the danger will disappear. Over the Empire's boundless meadows, steppes, and prairies roam, in European Russia alone, 24,609,260 head of cattle, 44,465,450 sheep, 9,243,000 hogs. It cultivates 1,098,507,780 acres of land.

The country is opening mines, draining marshes, clearing forests putting land hitherto held to be of no value under cultivation.

Foreign cotton and corn, tea and tobacco are being tried. In its efforts to emancipate itself from foreign imports, Russia will want machinery, tools, seeds, etc. No nation is better situated to provide these than the United States.

J. C. MONAGHAN,

CHEMNITZ, *September 13, 1899.*

Consul.

PUBLIC WORKS AT TALIENTWAN.

Minister Conger sends from Peking, September 1, 1899, a clipping from the North China News in regard to the extensive public works undertaken at the new Russian port of Talientwan. The article reads:

The corrected announcement the other day by Reuter that Talientwan would be opened as a free port as soon as the railway is finished was really supererogatory, this being one of the terms of the agreement made between China and Russia for the lease to the latter power of Port Arthur and Talientwan. We have now before us the plans of the works that are about to be undertaken in Victoria Bay and on shore to make Talientwan a great commercial port and city, the fitting terminus of the great railway uniting the Far East with Europe. We can not but admire the thoroughness of the work as planned; it is grand in conception and has been thought out in the minutest detail, and it is satisfactory to know that the work as planned will be carried out, the sum of 16,000,000 rubles, or about £1,750,000, having already been appropriated for the purpose. We have more than once inveighed against the manner in which Russia has become possessed of the peninsula on which these great works are to be carried out; but there can be no question that the use which Russia proposes to make of her acquisition will be for the benefit of all residents in and traders with the Far East, and that very high ability as well as enterprise are shown in her designs.

We have two plans before us, the former representing Victoria Bay and its surroundings, the latter the future city and harbor of Talientwan. The bay itself is landlocked on three sides and is only open to the east, and the new foreign city and harbor will be on the south side of the bay, facing due north, the city itself being an obtuse-angled triangle, with the apex to the north. Provision is made for the extension of the foreign city to the south and southeast as required—towards the hills—with large reservations for parks and gardens; and for the inevitable Chinese town on the southwest; the new city and port being connected with the trunk line through the peninsula to Port Arthur by a branch line some 10 miles long. The only drawback to the new city is that it will face north, and it promises accordingly to be hot in summer and cold in winter. It will be open to easterly and north-easterly winds and sheltered from winds coming from any other point of the compass. The 1884 edition of the China Sea Directory says:

"Victoria Bay (so named by Captain Bouchier, Her Majesty's steamship *Blonde*, in 1840) affords good anchorage in $5\frac{1}{2}$ to 3 fathoms mud. In 1860, the chief portion of the British fleet and transports anchored in two lines along its south shore; the remainder over on the eastern shore, off Odin Cove, which is a snug little anchorage with room for four or five ships if they moor.

"This bay is sheltered from all winds, excepting those from east-north-east to east-south-east. An easterly gale would have a clear fetch of 10 miles, but it

is not quite evident that one has ever occurred in the spring and summer months. The inhabitants on the north side of the bay stated that these gales were prevalent, and sent in a heavy sea, while on the south side it was said that they were not known; and the shores certainly showed no evidence of ever having been visited by one. The same people who stated that easterly gales were so prevalent also added that the bay was full of sunken rocks, but none as yet have been discovered that are not visible at low water. It is more probable that in spring and summer the prevailing winds are southwesterly, southerly, and southeasterly, occasionally easterly, and certainly if the wind from the latter quarter blows with any force a heavy swell must necessarily set in."

Two breakwaters are to be constructed in front of the city, to inclose the new harbor, the one on the west side running due north and that on the east side north-north-east, with an arm at its seaward extremity running a little to the northward of north-north-west. Within and for a little distance outside these breakwaters, which are about $2\frac{1}{2}$ miles apart, the harbor is to be dredged and maintained at 30 feet, and a channel is to be dredged and maintained at the same depth from seaward in a northeasterly direction. Close into the shore, where the smaller class of vessels will lie, a somewhat less depth will be maintained. On the east side will be piers and godowns for the use of vessels with passengers and general cargo, the railway being carried along the front of the city, between the bund and the harbor, to these piers, so that passengers will be able to step direct from the steamer into the train. There will be ample accommodation here for steamers to lie alongside the piers in 28 to 30 feet of water, and Shanghai will have to bestir itself if it is not to be entirely cut out by the new Russian port. The western breakwater starts from a small promontory which juts out into the sea. Here, there will be a dry dock and a pier for vessels bringing coal, lumber, and other coarse cargoes, a large space between this pier and the western side of the city being reserved for godowns and coal yards, lumber yards, etc., branch lines connecting it with the railway. Thus, of the triangle which comprises the city, the northeast side faces the harbor, and here will be the esplanade; the northwest side faces this promontory, except at its western end, where there is an opening to the bay; and the future extension of the city will be on the south side. The streets in the new city are laid out at right angles with oblong blocks, the streets running northeast and southwest and northwest and southeast. In the future extension of the city, of which the base of the triangle forms the northern boundary, the streets will run north and south and east and west.

Full provision is made in the plan for parks, squares, bazaars, and all the amenities required and possible in a large city that starts full-fledged from the brain of one designer and does not grow up anyhow, as so many large cities have done.

The drainage works and waterworks are now being undertaken, and in the meantime no land will be sold. It is expected that in two years' time the harbor will be made and the city laid out and ready for building, when there will be a great open sale of the land. It is distinctly settled that Talientwan will be exclusively a commercial port, and there will be no naval station there at all. It will be a free port to the whole world. We do not doubt for a moment that it will fulfill the expectations of the Czar and his advisers, who have undertaken its establishment in such a liberal and comprehensive spirit.

MINERAL WEALTH OF YUNNAN, CHINA.

I give below an extract from Mesny's Chinese Miscellany on the above subject. The periodical alluded to is published weekly in Shanghai. General Mesny, the editor, is an old resident in China, having fought in the Taiping rebellion, for which service he received the title of general from the Chinese Government. What he says as to the mineral wealth of Yunnan may be taken as fairly accurate.

The mineral wealth of Yunnan is very great; gold, silver, copper, tin, iron, coal, and various other minerals are abundant throughout the most of this inaccessible province.

The Chinese Government is perfectly well aware of the existence of these mineral deposits, and permission has been granted by succeeding dynasties to extract the wealth from the earth, and the local government has furnished funds from time to time for the purpose of assisting local miners and metallurgists to exercise their calling on behalf of the State. But the regulations issued by the Government for the guidance of the miners and metallurgists have usually been of such a nature as to prevent a proper development of those industries; consequently, the work has been done in a very primitive and wasteful manner.

The usual manner of getting ore in Yunnan has been to follow a lode from the surface into the ground as long as possible, without going to the expense of sinking a shaft or driving profitless tunnels. The miners have usually been left to do as they pleased under ground, as the Government officials and private capitalists have considered it beneath their dignity to explore the caverns dug at their expense or under their orders. The miners, in most instances, have been very badly treated, both by official overseers and private capitalists, and have taken their revenge on their employers by deceiving them to such an extent as to ruin them. Their mode of operation in this respect has usually been to expend all the available capital in getting very poor ore—in some cases no ore at all—and leaving columns of the best-paying ore standing in various parts of the underground working, easily accessible whenever it was desired. In this manner, the miners have almost invariably succeeded in exhausting the resources as well as the patience of the officials and capitalists, with the result that they have been forced to abandon the mines as unprofitable investments, and the miners were disbanded and driven away without pay. After enduring suffering quietly for a time, the miners managed to repay themselves for their former trouble by extracting in a quiet way the ore they had left in the mines and selling it to petty local manufacturers, or themselves coining money, sometimes of superior weight and quality to the legal Government issue.

Last year (1896), His Excellency T'ang Ch'iung was appointed imperial commissioner and official superintendent of mining industries in Yunnan, with authority to employ foreign experts and introduce machinery for the working of the mines on the most approved western methods. Commissioner T'ang was also authorized to place himself in official communication with several viceroys and governors of provinces, who had been directed by imperial decree to supply a sum total of 600,000 taels for the purpose of mining and forwarding copper from the Yunnan mines to Peking. This proved as disagreeable to the provincial authorities as the extraction of their teeth; so far, Commissioner T'ang Ch'iung has not been able to obtain more than 30,000 or 40,000 taels from the various provincial magnates ordered by decree

to furnish 600,000 taels.* Having been authorized to adopt western methods, Commissioner T'ang went so far as to start a joint-stock company under official patronage; but the shares fell flat on the market, few if any having been sold. The public has no confidence in such affairs, as it has been cruelly deceived more than once.

The prefecture of Lin-an Fu is known to be rich in various metals. Tin is produced in large quantities in Mêng-tzü, Hsien; copper is worked in Ho-hsi Hsien; coal and iron are also met with and have probably been worked in some other counties of the same prefecture.

The prefecture of Shun-ning Fu is credited with being rich in diamonds, but I have not been able to find proof of this assertion; rough rubies, sapphires, and emeralds, as well as other stones, are known to be common enough in western Yunnan, and I have seen white sapphires there which were called diamonds—that is, by the Chinese name of Chin-kang Ch'üan. There may of course be real diamonds in this prefecture, but I prefer to think that this assertion has been made under a mistaken apprehension.

Wu-ting Chih-li Chou is the name of an important district, almost equal to a good fu or prefecture, and better than some füs. Copper, iron, and salt are abundant in this district, and coal is probably also found here.

The prefecture of Li-chiang Fu is very rich in minerals of various sorts. Gold has been washed out of the bed of the great river known to foreigners as the Yangtze, and which is locally designated as the Kin-sha Kiang, or river of golden sand. The gold washers are usually Tibetans or half-breeds, but many Chinese encroach on Tibetan territory to wash for gold and are usually rewarded for their efforts by good finds. The gold is nuggety, the nuggets running from the finest grains to the size of pease and beans. It is nearly pure, and was valued in 1877 at fourteen times its weight in silver. The same gold at that time was worth sixteen to seventeen times its weight of silver in other parts of China. I have used the word "encroaching" because these parts of the prefecture of Li-chiang were formerly parts of Tibet, and the gold found there to this day is generally admitted to belong to the Tibetan lamas or to their monasteries. Gold is, however, found in tributaries of the Kin-sha Kiang, which are nearly independent of the lamas; but the Chinese officials are so exacting that the washers do not find it profitable work, and washing is carried on under the milder rule of the lamas, especially in the subprefecture called Chung-t'ien, T'ing, where most of the population is of Tibetan origin. Silver, copper, lead, iron, and coal are also found in Li-chiang Fu; silver is said to abound in Wei-hsi, T'ing, another subprefecture of Li-chiang Fu, bordering on Assam, or very near it. The silver ore is very easily found and worked. I was told that the ore on being thrown into an ordinary blacksmith's forge or hearth was readily melted, the lead running off first and the residue giving some 80 per cent of pure silver; this is used at Atun-tzü and other places as currency. Marble is also abundant in this prefecture, and some of it appears to be of excellent quality.

The prefecture of Yung-chang Fu is said to be rich in various kinds of minerals—gold, silver, copper, and other things. All kinds of precious stones, especially rubies, are found in abundance in the prefectural city, where Chinese lapidaries have probably plied their handicraft for ages. I have not my notes with me just now, and do not exactly recollect what there was to be found in the way of real gems, but I was shown an uncut ruby, weighing nearly 10 ounces; it was, however, white throughout two-thirds of its entire volume, the other third being of the beautiful color known locally as tao-hua shui, or peach-blossom water, which

* NOTE BY CONSUL.—I understand that half of this sum has been furnished.

means ruby of the first water. Small rubies were sold by the catty, and I procured 6 catties at what is said to have been a very reasonable price.

These rubies are generally used for making ornamental designs of various articles de vertu in gold and silver. I believe that rubies are now very scarce in Yung-chang Fu, owing to their having been diverted of late to other markets.

In the department called Yung-pei, Chih-li T'ing, gold is found in abundance by washing in the valley near the city. The inhabitants of the neighborhood keep large flocks of geese to work the gold fields for them. When the geese are found to be very heavy they are killed and their crops emptied of the gold contained therein. A flock of geese is sometimes worth a good deal of money; but geese dressed ready for eating are very cheap, indeed—from 15 to 20 cents each, as near as I now remember.

The prefecture of K'ai-hua Fu, bordering on Tung-king, is said to have some valuable deposits of copper, tin, and iron within its limits, which it does not pay to work according to the primitive methods in vogue throughout China.

The prefecture of Tung-ch'uan Fu is one of the richest in Yunnan in deposits of copper. Blocks of pure copper are said to exist in some localities, which have defied all the ingenuity brought to bear on them for ages to demolish or remove them. His Excellency T'ang Ch'iung will probably find means of reducing them to marketable metal by the aid of the modern appliances his Japanese experts are said to have taken to Yunnan last year. Iron and coal are also found in Tung-ch'uan Fu, and other metals are likely to be present; but copper is the principal one in that prefecture.

The prefecture of Chao-tung Fu is probably the richest in Yunnan. Its copper deposits are said to be immense; many mines have been opened and worked, more or less assiduously, for the past two hundred years, in order to supply the various mints throughout China with the copper necessary for the cash coinage. The mines are situated nearer the navigable parts of the Yangtze than any other mines, and this fact is a very great advantage, as it permits of the copper being carried to distant markets at lower rates than is possible with copper drawn from mines farther inland. Nearly all existing mines in Chao-tung Fu are, however, flooded with water, and the natives, with their ordinary primitive methods, have so far failed to free them. The Japanese experts mentioned above will no doubt alter this state of things before long. I imagine that it will be found more profitable to open new mines on the most improved modern system than to work the old ones, which are nothing more than mere burrowings, where no modern machinery can be used.

The reduction of the ores on scientific principles is, however, a very important matter, whether the ores are produced by old-fashioned native methods or modern foreign ones. Unless the ores are treated scientifically, the most favorable result can hardly be expected. Gold may probably be found in sufficient quantity among the copper to make it profitable to extract at the first operation.

GEO. F. SMITHERS,

CHUNGKING, *September 13, 1899.*

Consul.

BICYCLE FACTORY IN JAVA.

There has lately been established in the city of Samarang a bicycle factory which is having considerable local success, though not many of the wheels have as yet been seen in Batavia.

The name of the concern is the Rijwiel-Fabriek Insulinde, and the capital is about \$10,000. The method is to import the different parts of the machines from Germany and put them together here. Besides the manager and bookkeeper, who are Dutchmen, there are two German skilled workmen, who have under them a number of natives. The machine is a good one and sells for about \$70. The racers weigh about 18 to 20 pounds and the roadsters about 25 to 35 pounds.

They have succeeded in getting the best part of the bicycle trade of Samarang and the immediate neighborhood, and are now advertising for agents to represent them in the different parts of Netherlands India.

It seems to me, however, that this ought not to alarm our manufacturers, as they ought to be able to sell a good medium-grade wheel here for less than \$70 and make a reasonable profit. As I pointed out in my last bicycle report (CONSULAR REPORTS No. 219, December, 1898, page 521), the best thing our bicycle men could do is to send out a good medium-grade wheel—one which will sell for a little less than \$70. There is only a very limited demand for the highest grades of wheels, as people here are not willing to pay the prices.

Several makes of American wheels are here, and they are selling fairly well; but the trouble is that their agents are, in almost every case, interested in pushing some English or German wheel. European manufacturers usually grant easier terms to their agents and customers here in regard to payments and commissions.

Our merchants and business men are too fond of adopting a "spot-cash" attitude; if they wish to enter the East Indian trade they will have to give up these methods or the Europeans will continue to retain the bulk of the business.

Speaking of bicycles leads me to say that this is the very finest kind of a country for automobiles, as the roads are good, and, owing to the bad climate, the wear and tear on horseflesh is very great. At present, there are only two in the island—of what make I do not know. I am convinced that it would pay to introduce them. An active and capable agent should be sent out, who could spend some

time in giving exhibitions and showing people what a saving of horse-flesh they would be. Power is cheap here, as water is abundant and fuel and labor reasonable in price. The attempt should be made, and I shall be very glad to answer any inquiries, in this regard, which our manufacturers may desire to make.

SIDNEY B. EVERETT,

BATAVIA, *September 21, 1899.*

Consul.

SHIPMENTS TO DUTCH INDIA.

In the interest of American trade, I am compelled to draw attention to a subject of which I had heard for some time, but the accounts of which I thought might be somewhat exaggerated. I speak of the breaking open of merchandise in transit through Singapore to ports in Netherlands India. Merchants here and in Macassar now rarely receive a shipment via Singapore from which something has not been abstracted, and they have begun to figure regularly on a certain percentage of loss for all goods shipped through that port.

Recently, the Chamber of Commerce of Macassar forwarded a petition to the Dutch consul-general at Singapore urging him to represent the matter to the authorities and secure proper protection to those who transship goods in that port. I do not hear that any attention has been paid to the consul-general's request. The object appears to be to kill Batavia and Macassar (the latter a free port) as distributing centers for Netherlands India. For instance, machinery shipped via Singapore direct to Tegal, or some such place, in a Singapore ship, stands a good chance of getting there in good condition. If, however, the same machinery is shipped via Batavia from Singapore in a Dutch steamer, the chances are that it will arrive in bad order and with essential parts missing.

There is no doubt that to a considerable extent the desired effect has been achieved; for whereas formerly nearly everything for any part of Netherlands India used to come through Batavia, it is now a fact that many of the smaller ports in the colony are importing and exporting direct.

Macassar was made a free port to compete with Singapore, the latter being also free; but the latter place has waged such a relentless war that it has done Macassar a great amount of damage. In fact, I am told that for those living in Macassar it is useless to have anything come from Singapore, and that the only way is to import things direct from Europe, or else via Batavia from one of the

Dutch steamers that come straight from Holland without going to Singapore.

The best way to ship goods here from New York is either by steamer to Amsterdam or Rotterdam, thence by direct steamers of the various Dutch lines to Batavia and the other ports in this colony; or by steamer to Liverpool, thence by direct English or Dutch steamer to Batavia. Those who ship via Singapore do so at their peril and must expect to find themselves involved in all sorts of claims and lawsuits on account of goods damaged and lost.

SIDNEY B. EVERETT,

BATAVIA, *September 22, 1899.*

Consul.

EXPORT TAX ON MOTHER-OF-PEARL IN TAHITI.

Under date of December 14, 1898, Vice-Consul Hart transmitted a report (printed in CONSULAR REPORTS No. 223, April, 1899, page 708) concerning the proposed export tax upon mother-of-pearl shells.

I have now to inform the Department that on the 14th instant a decree was promulgated at the instance of the President of the Republic of France, establishing an export duty of 15 francs (\$2.89) per 100 kilograms (220.46 pounds) upon all mother-of-pearl shells exported from this colony. This tax, however, is to be refunded upon the production of a certificate from the customs authorities in France, showing that the shells have been entered at a French port and declared for consumption.

This measure was adopted in the hope that it might stimulate trade between France and this distant colony. The opinion prevails here, however, that the duty imposed is too low to force the shipment of Tahiti shells to France, and that it will result only in hardship for divers, should merchants combine and deduct the amount of the tax from the price paid for the shells at the fisheries.

It is claimed, moreover, that France is not the best market for Tahiti pearl shells; and that the variety produced here (black edge) has in the past found but limited demand there, and in consequence large shipments to France would be unprofitable. Notwithstanding the export duty, Tahiti pearl shells will find their way to the London market, which has for many years been the distributing point for the world's supply of mother-of-pearl shells.

This tax will have no considerable bearing, if any, upon the trade of the United States. Large quantities of shells are shipped

through the United States in transit to London, and this will probably continue. I am informed that notwithstanding the fact that Tahiti shells can be purchased (by arrangement) at New York before transshipment, buyers in the United States rarely avail themselves of the opportunity, but usually secure their supply from London.

JACOB L. DOTY,

TAHITI, *August 15, 1899.*

Consul.

PLAGUE IN BOMBAY: HAFFKINE SERUM.

The plague in the Bombay presidency continues. It had its inception in the latter part of the year 1896, and has spread into every collectorate and district of the presidency. From statements showing the mortality from plague furnished me by the government of India, I find there were, during the week ending September 3, 1899, 4,390 deaths from plague in the presidency of Bombay.

Its progress in the southern Mahratta country during the past year has been remarkable. It has assumed an epidemic form in the city of Poona, a place of over 100,000 inhabitants, which, on account of its supposed sanitary condition—high elevation, dry heat, with a climate from May to November like an English spring morning—has been made the home for the Bombay army and the residence of the governor during the monsoon season.

This city has had 23,331 cases and 17,809 deaths from plague up to the present time. The epidemic is just at present at its height, and there is great suffering and distress. During the week ended September 2, 1899, there were 1,086 deaths from plague, and on Monday, September 4, 1899, 117 cases and 110 deaths were reported in that city.

Western India being now threatened with famine on account of the failure of the monsoons to produce the usual amount of rain to nourish the crops and induce late sowing, it is feared that the coming season will witness a further ravage of the plague.

The distance may save America; yet this scourge repeatedly reached Europe in the early centuries. It is now raging in the East, and there is reason to fear that it is gathering force. It has appeared in Alexandria, Egypt, and Oporto, Portugal, which is only a week's journey from the western world, and the mediæval plague is quite capable of taking advantage of modern rapid traveling.

The plague is an acute infective fever; its primary cause is a living organism, a minute microscopical being which, having gained entrance to the body, multiplies with great rapidity, producing a series of local disturbances giving rise to characteristic symptoms,

and diffusing throughout the body a subtle poison which is generally the cause of death.

Our modern physicians are not much better equipped for the treatment of the disease than were their mediæval predecessors. Inoculation, although its results are extremely important and promising, is a prophylactic rather than a treatment, a wall against the enemy rather than a weapon with which to meet it. There are, of course, great advances in the general treatment of the cases, but modern science has not yet discovered a specific against plague.

The plague microbes are capable of living and multiplying only while they have access to supplies of organic nourishment. They are able to pass directly from body to body or to remain alive and even multiply outside of the body. Thus, there are two ways in which plague may travel; it may creep from patient to patient in a direct chain, or it may use places where suitable decaying substances are to be found as temporary links in the chain.

An antitoxin, or serum, first prepared by Professor Haffkine as a plague inoculation, called Haffkine's prophylactic, is now being used in Bombay and western India with remarkable results.

This prophylactic is prepared by first taking the plague bacilli, or the young germs, from a person affected with the plague and cultivating them. These microbes are killed by artificial means and a high degree of heat. From these dead germs and their poisonous excrements is produced a fluid that is believed to have acquired the power, when injected into the human system, to render the blood immune from the attack of plague germs and to neutralize their effect. The injection of such a poison has the effect of an antitoxin and prevents the system from nourishing plague. A dead plague germ being inoculated into a person, plague will not follow. A person after having one attack of the disease is rarely liable to a second. The person first inoculated is subject to symptoms of the plague. In vaccination for smallpox a living germ is dealt with, whereas in plague inoculation dead seed only are injected.

Experiments are now being carried on at the laboratory at the Government House, Parel, Bombay, where further discovery is expected to perfect this plague preventative.

Strangely enough, inoculation is exceedingly unpopular among the natives. The government has had great labor in persuading the Hindoo mind of the efficacy of Haffkine's prophylactic against plague and at the same time of its utter harmlessness in every other respect.

The Hindoo is suspicious that the dead germs and their toxic excreta may be of animal rather than vegetable substance, which would make the injection of the fluid into their body a religious offense.

The measures generally relied upon in the dry season were entire evacuation of infected villages and hamlets, isolation of the sick, segregation of the "contacts," and a thorough disinfection of all infected places. In localities where the outbreak grew virulent in the monsoon, evacuation was impossible; but inoculation was extensively tried and strikingly demonstrated the protective power of the prophylactic.

At first, the people failed utterly to understand the use of segregation. To the masses, infection and contagion had no meaning. Nothing but the splendid confidence of the people in the British Government could have made sanitary measures possible, in the broadcast and rapid manner in which it became necessary to use them among untrained and uneducated millions.

Owing to the enormous population of the city of Bombay, and also to the fact that many plague cases are suppressed, secreted, or returned under fever or other causes, it is impossible to get general statistics of the effects of Haffkine's plague inoculation. However, I have a few returns from up-country places of the results of inoculation.

At Kirkee, the plague broke out among the royal-artillery followers. They were living under far better conditions than many villagers, and a cordon had been drawn around that place. Six hundred and seventy-one persons were inoculated and 859 not inoculated. Among those inoculated, there were 32 attacks and 17 deaths, giving a mortality of 2.05 per cent; while among the uninoculated there were 143 attacks and 98 deaths, or a mortality of 11.4 per cent.

At Belgaum, among the men of the Twenty-sixth Madras Infantry, after all of the Sepoys had been inoculated, there were only two attacks, both of which recovered, whereas before the inoculation there had been 78 cases in the regiment.

At Ganeshkhind, among the servants of the governor of Bombay, in a certain quarter, there were 324 persons inoculated and 300 uninoculated. Fourteen cases of plague occurred in that quarter, and every one of those cases occurred among the 300 who were not inoculated.

Bacteriological and chemical analyses of the atmosphere and ground air, etc., are being made in these infected places, results of which may be of extreme interest and infinite use in the future.

WILLIAM T. FEE,

BOMBAY, *September 7, 1899.*

Consul

INCREASE OF AMERICAN TRADE IN TURKEY.

Consul-General Dickinson, of Constantinople, on October 20, 1899, writes:

I inclose copy of a report of the increased commerce between the United States and Salonica in European Turkey, which appeared last evening in the *Levant Herald* (the English organ), of this city. It attributes the marked increase of commerce between the United States and Salonica to the direct steamship line which was established last February.*

This new steamship line is meeting with strong opposition from the Liverpool companies, but is doing much to extend American commerce in Turkey. I regard this enterprise as vital to the growth of American business in the Levant.

AMERICAN COMMERCE IN TURKEY.

[Salonica correspondence of the *Levant Herald*.]

The establishment of a regular shipping service between Salonica and America, and vice versa, by the Barber Steamship Company has powerfully contributed to the development of commercial relations between this port and the United States. We have now on our market two marks of American flour, patent and ordinary shoe leather, tallow, and nails (*pointes de Paris*), which compete successfully with the European articles that for years had the sole control of our market. In exports, several thousand tons of manganese and chrome ore, for which the only market until recently was England, have been sold in America at better prices, owing to the extremely low freights charged by the Barber Line. The greater part of our opium and large quantities of skins are also shipped by these liners for America.

British trade with our town, barring coal, is dwindling year by year, and with this new and formidable rival, British manufacturers must look about them if they do not wish to be completely ousted from this market.

AMERICAN COTTON GOODS IN WEST AFRICA.

Few of our manufacturers of cotton goods think of the possibility of introducing their products into the vast stretch of West Africa; yet there is a promising opening here for them. With the enlargement of our plants and the improvement of machinery for the manufacture of cotton goods, there should also be increased effort to secure a trade footing in the tropical countries, as more cotton fabrics are used as clothing here than any other kind of goods. Tropical markets, such as this coast presents, will be consumers for generations to come. European firms show much activity in seeking to secure and control this trade. Their policy is not so much

* See CONSULAR REPORTS No. 224 (May, 1899), p. 76.

to make enormous profits now as to gain trade advantages for the future.

Africa, like China, is the land of the "teeming millions," and as the natives are brought into contact with Europeans, they are rapidly acquiring the habits and customs of civilization and are becoming large consumers of dry goods.

Great quantities of prints, sheetings, shirtings, etc., are daily transported to the interior towns and villages by native carriers, by canoes and sailing craft of every kind. These goods are largely imported from England, France, and Germany, whose manufacturers cater to native fancy and taste in certain lines of goods. In addition, the representatives of these firms have the advantage of long acquaintance with the African and have made local business arrangements that please the natives, employing them in the capacity of clerks, bookkeepers, etc., and thus keeping their goods constantly before the mass of native dealers.

The African, as a rule, is proud; he despises rags and places a premium upon good material. The native merchants, besides being shrewd traders, are excellent judges of dry goods—especially of the durability of fabrics of any kind. Being familiar with climatic conditions, they know what suits their trade, and that only will they buy. The low price of an article, if it is not suited to their taste, is no inducement to buy. It is simply what is wanted that sells. Nothing but the best goods for the cheapest money value should be sent here. Coarse cotton fabrics would not sell well; checks, gingham, unbleached domestics, etc., are considered too common; on the other hand, satins, prints, muslins, madras, karkis, sheetings and shirtings, and various other classes of cotton goods, would be popular if of good finish and attractive colors—any modification of blue and white or blue and black in prints or satins would please.

With the growth of American trade in competition with that of other nations, our manufacturers should pay more attention to making goods for export according to the requirements of the trade sought. Attention given to these details, together with our extensive facilities for superior work, will enable us to win.

The traditions of the African race should not be ignored in manufacturing for this market; for example, certain animals, trees, plants, vines, and even seashells are held in great respect by the natives, having been worshipped by their ancestors. The present generation does not forget these traditions, though many are educated and enjoy the advantages of civilization.

It is by observing these points that the European exporters have gained such footing in African trade. No doubt, in many instances their goods are inferior to our own in durability—starch taking the

place of body—yet they sell because African and not European ideas are respected in the design and manufacture of the goods.

Credit would not be a great inducement except to European houses, as the terms of trade here are generally cash. American goods of all classes would have a better show in this market if there were direct communication between the United States and this coast.

There is now a spirit of keen mercantile rivalry among the nations seeking this trade, but there is encouragement for American dealers to compete, if they will make the necessary efforts along the lines suggested. There are no discriminating tariffs, no restrictive legislation with which to contend. Aside from the 10 per cent ad valorem duty, this is practically an open field, and with more energy on the part of our exporters of cotton goods, their products can find a good market in West Africa.

JOHN T. WILLIAMS,
Consul.

SIERRA LEONE, *September 25, 1899.*

UNITED STATES PRODUCTS IN SOUTH AFRICA.

The following items may be of interest to American manufacturers:

Among the orders placed for goods in the mechanical line last month it is noticed that Collins & Co., of Hartford, Conn., have received many requests for edge tools, which have a great run in South Africa.

Orders for three boilers—viz, one 212 horsepower and two 108 horsepower—have been placed with the Sterling Water Tube Company, of Chicago.

Several powerful electric cranes for Durban have been ordered, but I can not find out from whom.

In the line of electrical machinery, several large orders have gone to England. One order for engines has been given to McIntosh, Seymour & Co., Auburn, N. Y.

Chicago manufacturers are delivering a match plant in the South African Republic. Of course, all the piping orders are placed in England. Two more refrigerating plants from England are about to arrive.

A very interesting lecture was recently given in Cape Town on the "Model factory" (National Cash Register Company), illustrated by over one hundred lime-light pictures.

While the United States is in the lead in shipments of windmills to South Africa, several are arriving from England, largely copied from the American.

Brewers' refuse grain would sell largely here if it could be pressed into briquettes after being mixed with corn meal, oil meal, or some such article of food, and molasses, glucose, or other cheap material of this nature. Samples of this refuse grain have arrived, but it is too light, and on account of its bulk freight rates would be excessive; consequently it could not compete in price with other cattle-food stuffs.

I am pleased to note that mantels, wire-screen doors and windows, iron bedsteads, blacksmith drills (hand), overalls, aprons; all kinds of tools, such as hatchets, chisels, bits, augers, etc.; household necessities of tin and iron of an endless variety, prepared food stuffs; collapsible cots, tables, chairs, and bath tubs for camp use; all kinds of ornamental screens, picture frames, picture molding, post-office supplies, oilcloths, perfumes, pianos, organs, letter-copying appliances, knockdown furniture, confectionery, canned fruit, easels, emery novelties, harness oil, oil stoves, soap, candles, axle grease, cash boxes, electrical belts, scales, lamps, starch, canned vegetables, corn flour, farmers' tools, fire extinguishers, hatracks, sad irons, school desks, stove polish, and many other articles too numerous to mention have been introduced through the agency of this consulate; and as soon as the excitement of the present political crisis has subsided, they will meet with sale.

COPPER IN NATAL.

I see by the papers that at the end of 1898 sixty-seven claims (areas prospected) were in operation, against six at the close of 1897. The ore is rich and valuable. Nickel has also been discovered; in fact, Natal, with its tea, sugar, and fiber industries, and its copper, nickel, and other mineral products, has a future.

MULES AND HORSES.

American mules and horses are arriving in large numbers on private orders, and are sold on ship to the Imperial Government. Large numbers are reported to be on the water, imported direct from the United States by buyers of the Imperial Government.

It is also noted that the Government, as well as that of the South African Republic and the Orange Free State, have bought largely of mules, oxen, and horses from the farmers of this country. In the event of war, a large demand for stock will exist after it is concluded.

J. G. STOWE,
Consul-General.

CAPE TOWN, *September 23, 1899.*

RHODESIA'S CUSTOMS TARIFF.

Consul-General Stowe writes from Cape Town, September 23, 1899:

A new customs tariff came into force throughout Rhodesia on the 1st of August. It is almost the same as the South African Customs Union tariff. Fifteen per cent of the receipts will be retained by Cape Colony for collecting the duties at its seaports. Considerable objection is made on account of its retrospective effect on stocks existing January 1, 1899. The duties imposed are:

CLASS I.—SPECIAL RATES.

Ale, beer, and cider: All kinds of strength exceeding 2 per cent of proof spirit:

- (a) In vessels of not greater content than 1 imperial quart, per imperial gallon..... 0 1 6 = \$0. 36
 (b) In other vessels, bulk, or wood.....per imperial gallon... 0 1 3 = . 30

Almonds and nuts.....per pound... 0 0 2 = . 04
 Beads, known as "Kaffir beads".....do..... 0 0 3 = . 06

Confectionery, including sweetened cocoa or chocolate, honey, jams, jellies, preserves, sweetmeats, candied or preserved ginger, or chowchow, and all other kinds compounded, made or preserved with sugar, but not including purely medicinal preparations, properly classed as apothecary ware.....per 100 pounds... 0 18 9 = 4. 58

Fruits: preserved, of all kinds, bottled, tinned or otherwise preserved, including pulp and candied peel.....per 100 pounds... 0 18 9 = 4. 58

Gunpowder and other explosives suitable for use in firearms, per pound..... 0 0 6 = . 12
 (and 7½ per cent ad valorem in addition).

Guns and gun barrels, firearms:

- (a) Single.....per barrel... 1 0 0 = 4. 87
 (b) Double and other.....do..... 0 15 0 = 3. 65
 (and in either case 7½ per cent ad valorem in addition).

Picks and hoes, Kaffir.....each... 0 0 6 = . 12

Pistols and revolvers.....do..... 0 5 0 = 1. 22

Spirits:

- (a) Perfumed.....per imperial gallon... 1 0 0 = 4. 87
 (b) Liqueurs and cordials exceeding 2 per cent of proof spirit and methylated spirits.....per imperial gallon... 0 15 0 = 3. 65
 (c) Other sorts, exceeding 2 per cent but not exceeding the strength of proof by Sykes' hydrometer, and so in proportion for any greater strength.....per imperial gallon... 0 15 0 = 3. 65

Tobacco:

- (a) Cigars and cigarillos.....per pound... 0 0 6 = . 12
 (and in addition 7½ per cent ad valorem).
 (b) Goorak or gooracco and hookah mixture, and all imitations or substitutes.....per pound... 0 6 0 = 1. 46
 (c) Snuff do..... 0 4 0 = . 97
 (d) Cigarettes.....do..... 0 4 0 = . 97
 (e) Manufactured and cut.....do..... 0 3 6 = . 85

Tobacco—Continued.

	£	s.	d.
(f) Manufactured but uncut.....do.....	0	3	0 = \$0. 73
(g) Not manufactured but stemmed.....do.....	0	2	6 = . 51
(h) Not manufactured and unstemmed leaf.....do.....	0	2	0 = . 49

Wine:

(a) Claret, not exceeding 20 per cent of proof spirit, per imperial gallon.....	0	6	0 = 1. 46
(b) Other than (a) exceeding 2 per cent, but not more than 50 per cent of proof spirit.....per imperial gallon...	0	9	0 = 2. 19
(and in addition 7½ per cent ad valorem on all wines when imported not in wood).			

(Wine exceeding 50 per cent of proof spirit to be classed as 3 spirits.)

CLASS II.—SPECIAL. (AD VALOREM 20 PER CENT.)

The following articles shall be liable to a duty of 20 per cent ad valorem:

Blankets and sheets or rugs, cotton or woolen, or manufactured of cotton and wool, commonly used as cotton or woolen blankets or rugs, the single article, in pairs, or in the piece, and coats, jackets, or other apparel made of blanketing or baize.

Bonbons, surprise packets, and crackers, and other similar fancy confectionery.

Carriages, carts, coaches, wagons, and all other wheeled vehicles intended for the conveyance of persons or goods, including finished or fashioned parts thereof, not being metal parts not usually made in the union, but required in the manufacture of wheeled vehicles therein, but not including bath chairs, perambulators, toy carts, store trucks or barrows.

Extracts and essences of all kinds used as a food, flavoring or perfumery, including saccharine.

Fireworks of all descriptions.

Medicinal preparations, not being drugs for dispensing purposes.

Perfumery, cosmetics, dyes, powders, and soap, or other preparations for toilet use, and soap powders and extracts.

Shawls.

CLASS III.—AD VALOREM 7½ PER CENT.

The following articles shall be liable to a duty of 7½ per cent ad valorem:

Articles of wearing apparel and personal adornment, including both shoes and slippers (exclusive of blankets, sheet, rugs, etc.).

Cottons, linens, silks and woolens, or mixtures thereof, in the piece or otherwise (exclusive of blankets, sheet, rugs, etc.).

Drugs and chemicals (exclusive of medicinal preparations not being drugs for dispensing purposes, and chemicals for use in the extraction of metal from ores or other mining or gold-recovery purposes).

Furniture, including brushware, cabinet ware, carpets, glassware, household utensils, lampware, and musical instruments.

Haberdashery, drapery, and millinery.

Jewelry, plate, clocks, watches.

None of these duties shall extend or apply to any articles ground, produced, or manufactured within the South African Customs Union, or to any articles described in the free list, attached to the said customs union tariff.

THE CUSTOMS UNION FREE LIST.

The following is the customs union list of free articles alluded to, to which is subjoined the special Rhodesian list of free food stuffs and other articles:

Agricultural implements and machinery, and all apparatus and plant usually and principally employed in farming operations.

All raw produce of South Africa imported overland.

All articles grown, produced, or manufactured within the customs union, and brought across any inland border of any state, colony or territory belonging to the customs union (except (a) flour, wheaten or wheaten meal manufactured from other than South African wheat; (b) spirit distilled from the produce of and within the customs union of a class upon which, by way of excise, a duty may at the time of importation into such state, colony or territory be by its law imposed or levied, unless it be proved that a like duty of not less amount has been paid elsewhere within the customs union in respect of the spirits so imported). Provided that, if such a duty shall have been so paid elsewhere within the customs union but if of less amount, then there may be by law imposed or levied upon such spirits when imported, a duty of customs not greater than the difference between the excise duty here legally imposed or levied on spirits of the same class and the duty of less amount which has been so paid elsewhere.

Ambulance materials imported by recognized associations, corps or hospitals lawfully established for instruction or drill in first aid to the wounded.

Anchor and chain cables for the use of ships, tugs, or lighters.

Animals, living (except mules and geldings, and cattle and sheep for slaughter).

Arms, ammunition, appointments, and uniforms for the regular military, naval or volunteer, imperial or colonial forces of Her Majesty, or for similar or burgher forces of any government belonging to the customs union.

Asbestos packing and boiler composition.

Atlases, charts, globes, and maps.

Bags, jute, for flour, grain, manure, produce, sugar, wool, coal and minerals (not including paper bags); and jute bagging and sacking in the piece.

Bands and belting of all kinds for driving machinery, binding twine or harvest yarn, boiler tubes, bolting cloth, and mill silk.

Band instruments and stands the bona fide property of any government belonging to the customs union, or of a regular military or volunteer corps, and not the property of individuals.

Bones, feathers, ivory, hair, hoofs, horns, shells, skins, teeth, wool, and other parts of animals, birds, fishes, or reptiles, not being manufactured, polished, or further prepared than dried and cleaned, but in their raw and unmanufactured state.

Bookbinders' requisites, consisting of boards, cloth, leather, marble paper, skin, thread, tape, vellum, webbing, and wire.

Books and music, printed, including newspapers and periodicals, not being foreign unauthorized prints of any British or South African copyright work.

Bottles and jars of common glass or earthenware, empty or imported full of any article liable to be rated duty, and bottles empty, commonly used for aerated waters.

Boxes, empty, cardboard and wooden, put together or in pieces or shooks for packing.

Brass and copper, and composition metal in bars, ingots, plates, and sheets; plain, including perforated, but otherwise unmanufactured.

Bullion, coin or specie.

Carriages, carts, wagons, and other wheeled vehicles, the manufacture of South Africa, imported overland.

Church decorations, altars, bells, fonts, lecterns, pulpits, organs, plate or vestments, and illuminated windows imported by or for presentation to any religious body.

Coir, candlewick, cotton, flax, fiber, flock, hemp and jute; raw, waste, or unmanufactured.

Consular uniforms and appointments and printed official consular stationery.

Cork dust, paper shaving, sawdust, husks and other waste substances intended and suitable for use only as packing material.

Corks and bungs.

Cups, medals, and other trophies imported for presentation or presented as prizes at examinations, exhibitions, shows or other public competitions for excellence in art, bravery, good conduct, humanity, industry, invention, manufactures, learning, science, skill or sport, or for honorable or meritorious public services; provided that such articles shall on importation or delivery free from the customs bear engraved or otherwise indelibly marked on them the name of the presenter or presentee, and the occasion or purpose for which presented.

Diagrams, designs, drawings, models, and plans.

Diamonds and other gems or precious stones in their rough state.

Dye nuts, gambier, myrobalans, sumac, valonia, and other dyestuff, in bulk—for leather.

Engravings, lithographs, and photographs, and enlargements or reproductions of the same.

Fire escapes and fire hose and hose reels.

Fire clay, terra alba, and fire bricks.

Fish fresh, and fish ova; also dried, cured, or salted fish, and raw fish oil of South African catching.

Flowers of sulphur and other substances, in bulk, suitable for destroying diseases on animals, plants and trees.

Fruit: fresh or green, including cocoanuts.

Fruit and other produce, driers or evaporators of.

Glue.

Guano and other substances, animal, mineral or vegetable, artificial or natural, suitable for use as fertilizers or manures.

Haircloth and springs for furniture.

Ice.

Iron and steel: angle, bar, channel, hoop, rod, plate, sheet, or T; plain, including perforated and galvanized, rough and unmanufactured, not including corrugated sheets.

Lead: bar, pipe, and sheet.

Leather: patent, enameled, roan and morocco, and pigskin, in the piece: for boots, shoes, harness, saddlery, cart trimming and other leather manufactures.

Lifeboats, belts and buoys, and other life-saving apparatus imported by any recognized society.

Machinery fitted to be driven by cattle, electric, gas, heat, hydraulic, pneumatic, steam, water or wind power, including spare parts and apparatus and appliances used in connection with the generating and storing of electric power or gas (but not including electric cable or wire, or the posts for carrying the same, and not including lamp-posts, gas lamps, or their fittings).

Metal of all sorts in bars, blocks, ingots and pigs, for founding, not elsewhere described.

Mining buckets, skips, trucks, and tubs, wheeled or otherwise, for hauling minerals or ores on rails or wires.

Packing or lagging for engines and machinery.

Paper for printing books, pamphlets, newspapers and posters, or for lithographic purposes.

Paintings, pictures, picture books and etchings.

Pipes, piping, and tubes of earthenware or metal of all kinds, for gas, drainage, sewerage, irrigation, water supply or pumping (not including downpiping and guttering, or cocks and taps).

Potash and soda, carbonate, bicarbonate, caustic, crystals, and silicate.

Printing and lithographic inks.

Printing, lithographing, paper cutting, folding, numbering, and perforating machines, or presses, blocks, forms, fonts, plates, rollers, stones, and type; and other apparatus suitable only for use in the bookbinding and printing industries.

Public stores, imported or taken out of bond by, and bona fide for the sole and exclusive use of the Government of Her Britannic Majesty, or the government of any colony, state, or territory belonging to the customs union, provided that a certificate be delivered to the customs given under the hand of a principal imperial, military, naval, civil commissariat, or ordnance secretary or officer, or under the hand of a secretary to any government within the customs union, setting forth that any duty levied on such public stores would be borne directly by the treasury of his government; and provided further that no portion of such stores used or unused shall be sold or otherwise disposed of so as to come into the possession of or into consumption by any parties not legally entitled to import the same free of duty, until the intention so to sell or dispose of the stores shall have been notified to the principal officer of customs in the colony, state, or territory where they were first imported, to whom the duty leviable according to the tariff then in force shall be paid by the government selling or disposing of the stores.

Railway construction or equipment requisites, such to mean the following: Rails, sleepers, fastenings for rails or sleepers, girders, iron bridge work, culvert tops, locomotives, tenders, ballast trucks, goods wagons, carriages, trolleys, engine water tanks, turntables, weighbridges, and permanent or fixed signals.

Rattans, cane and bamboo, unmanufactured.

Resin and carbonate of ammonia.

Saddle-trees.

School furniture and requisites: being all articles certified by the superintendent-general of education, or any official appointed for that purpose in any colony, state, or territory in the customs union, to be for use in any school.

Sculpture, including casts or models of sculpture.

Seeds, bulbs, plants and tubers for planting or sowing only, under such regulations as regards edible kinds as the customs authorities may impose to safeguard the revenue against diversion into ordinary consumption.

Sheep, dip, sheep-dipping powders, materials suitable for dips, and dipping tanks.

Specimens illustrative of natural history.

Sprayers and sprinklers, and other apparatus for destroying pests or diseases in stock, plants, or trees.

Staves.

Steam launches, tugs, and lighters; provided that when condemned or landed to be broken up, duty shall be paid at the customs on the hull and all fittings according to the tariff that may then be in force.

Sulphur: substances for destroying pests or disease in stock, plants, or trees, and disinfectants.

Thread: boot and shoe makers', saddlers', and sailmakers', and seaming twine.

Tin and zinc: bar, plate or sheet, plain or perforated, but otherwise unmanufactured.

Telegraphs and telephones: materials and instruments for use in construction and working of telegraph and telephone lines.

Tobacco, the produce of South Africa, imported overland.

Tramway-construction requisites, such to mean the following—Rails, sleepers, fastenings for rails or sleepers, iron gates, girders, iron bridge work, and culvert tops.

Vaccine virus and toxin.

Vegetables, fresh or green (but not including potatoes or onions).

Water-boring apparatus.

Wine presses and wine pumps.

Wine, spirits, and beer, imported direct or taken out of bond by, and for the sole use of, commissioned officers serving on full pay in the regular military or naval forces of Her Britannic Majesty, subject to such regulations as the customs may make for the due protection of the revenue, provided that if any such liquors shall be sold or otherwise disposed of to, or for consumption by, any other person not legally entitled to import the same free of duty, without the duty being first paid thereon to the customs according to the tariff then in force, then they shall be forfeited, and the parties knowingly disposing of such liquors, or into whose possession the same shall knowingly come, shall be liable to such penalties as may be prescribed by law.

Wire and wire netting for fencing, droppers, gates, hurdles, posts, standards, strainers, staples, stiles, winders, and other materials, or fastenings of metal ordinarily used for agricultural or railway fencing.

Wire rope.

Wool, straw, hay, and forage presses.

SPECIAL RHODESIAN FREE LIST.

Acetic acid.

Animals, viz, mules and geldings, and cattle for slaughter, and sheep for slaughter.

Bicycles, tricycles, and velocipedes, including accessories.

Blasting compounds, including all kinds of explosives, suitable and intended for blasting, and not suitable for use in firearms.

Butter, butterine, margarin, ghee, and other substitutes for butter.

Candles.

Cement.

Cheese.

Chicory, and substitutes for coffee.

Coffee.

Cocoa and chocolate, unsweetened.

Cocoa and milk, chocolate and milk, or coffee and milk.

Condensed, desiccated or preserved milk or cream.

Coals, coke, or patent fuel.

Corn and grain, viz: barley, maize, millet, oats, rye, wheat, beans, and pease in the grain or crushed, flaked, ground, hulled, malted, pearled, split or otherwise prepared, oats not in the grain and bran meal, flour, wheaten or wheaten meal, including pollard.

Dates.

Fish: cured, dried, pickled, preserved, pressed or smoked.

Fodder, viz: chaff, hay, lucerne, oat hay, and other fodder.

Fruit, dried, of all kinds, including almonds and nuts.

Ginger, green and dry.

Meats, cooked, dried, fresh, chilled, frozen, pressed, pickled, salted, smoked, or otherwise cured or preserved, including lard, fats and other similar substances and soups, but not including extracts and essences.

Matches.

Ocher, Kaffir.

Oils, not essential or perfumed.

Salt.

Soap, not including toilet soaps and soap powders and extracts.

Spices.

Sugar.
Tallow and substitutes for tallow.
Tamarinds.
Turmeric.
Tea.
Vinegar.
Vegetables (including onions).
Wood.

TRANSIT TARIFF TO RHODESIA.

On and after July 20, 1899, the undergiven rebates of customs duties will be allowed on goods imported or warehoused on importation into the Cape Colony, whenever such goods shall be removed overland into southern Rhodesia:

I.—On all goods, wares or merchandise chargeable with duty under the customs amendment and tariff act, 1898, Classes I, III, and IV, entered for removal overland to southern Rhodesia, rebate shall be allowed to the extent of the difference between the duties specified in Schedule B to the said act and a transit duty of £3 for every £100 of the value of such goods, etc., and such transit duty of 3 per cent ad valorem shall be the "duty less rebate" to be paid on such goods, etc., except as to the following articles on which no rebate shall be granted:

(a) Ale, beer, and cider; all kinds of strength exceeding 2 per cent of proof spirit—

(A) In vessel of not greater content than 1 imperial quart;

(B) In other vessels, bulk or wood;

Beads, known as "Kaffir beads;"

Confectionery: including sweetened cocoa or chocolate, honey, jams, jellies, preserves, sweetmeats, candied or preserved ginger or chowchow; and all other kinds compounded, made or preserved with sugar, but not including purely medicinal preparations properly classed as apothecary ware;

Fruits: preserved, of all kinds, bottled, tinned or otherwise preserved, including pulp and candied peel;

Almonds and nuts;

Gunpowder and other explosives suitable for use in firearms;

Guns and gun barrels, firearms—

(A) Single;

(B) Double and other;

Picks and hoes, Kaffir;

Pistols and revolvers;

Spirits—

(A) Perfumed;

(B) Liqueurs and cordials exceeding 2 per cent of proof spirit, and methylated spirits;

(C) Other sorts, exceeding 2 per cent, but not exceeding the strength of proof by Sykes' hydrometer, and so on in proportion for any greater strength;

Tobacco—

(A) Cigars and cigarillos; (B) goorak or gooracco and hookah mixture and all imitations or substitutes; (C) snuff; (D) cigarettes; (E) manufactured and cut; (F) manufactured but uncut; (G) not manufactured but stemmed; (H) not manufactured and unstemmed leaf;

Wine—

(A) Claret, not exceeding 20 per cent of proof spirit;

(B) Other than (A) exceeding 2 per cent but not more than 50 per cent of proof spirit;

No. 232—8.

Blankets and sheets or rugs, cotton or woolen, or manufactures of cotton and wool, commonly used as cotton or woolen blankets or rugs, the single article, in pairs or in the piece, and coats, jackets, or other apparel made of blanketing or baize;

Bonbons, surprise packets and crackers, and other similar fancy confectionery;

Carriages, carts, coaches, wagons and all other wheeled vehicles intended for the conveyance of persons or goods: including finished or fashioned parts thereof, not being metal parts not usually made in the South African Customs Union, but required in the manufacture of wheeled vehicles therein, but not including bath chairs, perambulators, toy carts, store trucks or barrows;

Extracts and essences of all kinds used as flavoring or perfumery, including saccharine;

Medicinal preparations, not being drugs for dispensing purposes;

Perfumery, cosmetics, dyes, powders and soap, or other preparations for toilet use, and soap powders and extracts;

Shawls;

Articles of wearing apparel and personal adornment, including boots, shoes, and slippers;

Cottons, linens, silks and woolens, or mixtures thereof, in the piece or otherwise;

Drugs and chemicals (exclusive of chemicals for use in the extraction of metal from ores or other mining or gold-recovery purposes);

Furniture, including brush ware, cabinet ware, carpets, glassware, household utensils, lamp ware and musical instruments;

Haberdashery, drapery and millinery;

Jewelry, plate, clocks and watches.

Rebate shall be allowed of the whole customs duty on the following articles:

(b) Battery cloth, gauze, matting, sieving and screening; chains; cranes, elevators and shears; crucibles and cupelling furnaces and cupels; electric cable or wire and posts for same, and their fittings; lamp-posts (electric) and their fittings; lamps and switches (electric) not including fancy or ornamental lamps, switches and fittings for indoor lighting; felt, covering; flour, wheaten and wheaten meal, including pollard; furnaces for roasting minerals; gas pipes, lamp-posts (gas) and their fittings, including lamps; gums of all descriptions; hose, steam suction and armored, for use in connection with machinery, but not including garden; india rubber for machinery and mining apparatus and appliances; lead foil; machinery, including spare parts, not enumerated in the free list attached to the customs union tariff, not being for domestic use; molds, ingot; mules and geldings; ores and minerals, crude; plates of iron and steel combined; potatoes and onions (not preserved); retorts; rivets, and bolts and nuts (metal); shafting; steel and iron chimneys (smoke-stacks); tanks and vats, suitable and intended for mining purposes; tin and zinc, in blocks and discs; tramway-equipment requisites, such to mean the following:—cars, trolleys, water tanks and turntables; valve hide; wire, bells and gongs: signaling, for use in and about mines.

II.—On all goods, articles and things of every description imported or taken out of bond by or for the use of the government of southern Rhodesia, rebate of the whole customs union duty shall be allowed: Provided that whenever such rebate be claimed a declaration under the hand of a proper officer appointed by the government of Rhodesia shall be delivered to the customs, showing that the goods, etc., are bona fide for the sole and exclusive use of his government, and not to be sold or otherwise disposed of, and that any duty levied thereon would be borne directly and permanently by the treasury of the said territory.

III.—In case any goods shall be underentered in value, whether or not they be specially rated articles, the provisions of section 5 of act No. 6 of 1898 shall apply,

NOTES.

Coal at Gibraltar.—Consul Sprague, of Gibraltar, under date of November 8, 1899, sends the following statement:

Private sales of coal at Gibraltar.

Month.	1899.		1898.	
	Steamers.	Tons.	Steamers.	Tons.
July	124	14,373	151	18,820
August	122	17,756	139	16,751
September	129	18,278	171	23,285
Total	375	50,407	461	58,256
October	167	23,538½		

The consul adds:

The advance in England in the rates of freight on coal for abroad has caused coal to rise in this market, and the combination merchants have already advanced the price to 24s. (\$5.83) per ton.

I am informed that the price of coal in the port of Algiers has risen to 25s. (\$6.07) per ton, and at Port Said to 28s. (\$6.80).

Sole Leather in Japan.—In reply to inquiries by a Massachusetts firm,* Consul Harris, of Nagasaki, under date of October 23, 1899, writes:

There were imported into all Japan, during the year 1899, 1,528,419 catties (2,002,229 pounds) of sole leather. The countries whence imported and the amount from each is as follows:

Country.	Quantity.	
	Catties.	Pounds.
United States.....	826,514	1,082,733
British India.....	497,287	651,446
Germany.....	46,746	61,237
China	43,208	56,602
Australia.....	27,672	36,250
British America.....	9,471	12,407
French India.....	5,165	6,766
Great Britain.....	1,298	1,700
France.....	71	93

*Advance Sheets have been sent the manager.

The amount imported at the port of Yokohama was 976,030 catties (1,278,599 pounds); at Kobé and Osaka, 543,691 catties (712,235 pounds); and at Nagasaki, 2,955 catties (3,871 pounds).

For the first six months of the year 1899, there were imported at the port of Yokohama 149,502 catties (195,848 pounds); at Kobé and Osaka, 175,432 catties (229,816 pounds); and at Nagasaki, 136 catties (178 pounds); making a total of 325,070 catties (425,842 pounds) for the period named. The large importations of 1898 were attributable to the new tariff, which went into effect January 1, 1899. Under this tariff, the duty on sole leather is 5.69 yen (\$2.83) per 100 catties (131 pounds). I know of no reason why our people should not sell to Japanese importers a very large percentage of the sole leather used in the Empire. Parties desirous of engaging in the trade should write to the American Trading Company, the China and Japan Trading Company, Limited, and Messrs. Jardine, Matheson & Co., of Yokohama, Kobé, and Nagasaki.

Export of Portland Cement from Hamburg.—Consul Pitcairn writes from Hamburg, October 17, 1899:

I would call attention to the following statistics of the exportation of Portland cement to the United States from this consular district for the fiscal years 1898 and 1899.

Hamburg has always been considered the principal purchasing center for Portland cement, because of the peculiar quality of the clay found in this locality.

Exportation of Portland cement to the United States, fiscal years 1898 and 1899.

Quarter.	1898.	1899.
First	\$239,834.31	\$217,974.07
Second	169,713.56	199,172.69
Third	212,683.98	129,702.31
Fourth	282,731.83	286,796.78
Total	904,963.68	815,646.75
Decrease.....		89,316.93

I am reliably informed that a prominent German firm is establishing a plant at Nazareth, Pa., because of the competition of American cement.

Advance Sheets of German Consular Reports.—Vice-Consul-General Hanauer, of Frankfort, on November 15, 1899, writes:

To satisfy the numerous demands from German manufacturers, exporters, and chambers of commerce for an improvement in the

information service of the German consular bureau, the Imperial Government has recently begun to publish pamphlets containing extracts from consular reports and other interesting matter. The new publication is prepared by the Imperial Ministry of the Interior and bears the title "Advices for Commerce and Industry." It is something between our Advance Sheets and monthly CONSULAR REPORTS. The latest issue of this publication contains an article headed "Hints for merchandise exports to the United States," which advises manufacturers to state weights, measures, and prices in American standards; to strictly observe the United States customs regulations regarding the marking and classifying of goods and packing; to endeavor to introduce articles not only in the large cities, but in the medium-sized and small places; to try to please the varying tastes of the American people; etc.

Tourists in Switzerland.—Consul Ridgely, of Geneva, on October 31, 1899, writes:

It is estimated that since the 1st of January, 1899, up to the present date, no less than 2,500,000 tourists have visited Switzerland, and that they have each left in the country an average of 80 francs (\$15.44) or a total of \$38,600,000. Inasmuch as the population of Switzerland is only 2,933,300, it is not difficult to appreciate the significance of these figures. The per capita wealth of the country has heretofore been estimated at \$14; but the influx of money above referred to suddenly brings it up to \$29.45, or from one of the poorest countries (per capita) to one of the richest. This at least would appear to be the result on paper; but, as a matter of fact, the sudden increase of the country's wealth is not so great as the figures would indicate, for the reason that Switzerland buys nearly everything she sells to tourists, including the supplies for the hotels and boarding houses, and therefore, while a great deal of money comes into the country, a large proportion of it has to be paid out. However, the increase in the country's wealth from the tourist movement during 1899 is notable, hotel keepers being the largest beneficiaries.

American Beef in Germany.—Consul Hughes, of Coburg, October 18, 1899, says:

I would call attention to the opening for American fresh beef in this consular district, in spite of the regulations against its importation. If some of the large Chicago concerns would establish proper

agencies—like those in the smaller towns of the United States—and use them as feeders for the surrounding villages, the business would, without doubt, pay from almost the start. But the same amount of push is necessary in Germany as at home to make anything a success. I have repeatedly shown persons who have written to this consulate for information how they could do a large and paying business in provisions, but they all want to send their goods c. o. d. This can not be done. German merchants wish to see the article they are buying, and also to have three months' credit. The local trader is honest, but he must have time or he can not do business.

The poorer people in Thuringia live almost exclusively on potatoes, black bread, and beer. We take their dolls and china; they want our beef; why not let them have it?

Frozen Russian Pork in Germany.—The following, dated Frankfort, October 19, 1899, has been received from Consul-General Guenther:

At Mainz, Germany, experiments have just been made with frozen Russian pork by the several regiments of infantry stationed there. About a ton of this pork, which had arrived in a solidly frozen state, was used for dinner, but the result of the experiments, according to the reports published in German papers, was not satisfactory.

The meat, it is said, emitted an unpleasant smell while being boiled, and after being boiled for fifteen minutes became like a hard paste. The taste also left much to be desired.

Swedish Regulations on Imports of Horse Meat.—Consul Bergh writes from Gothenburg, October 26, 1899:

Custom-house officials here will not accept the veterinarian's name stamped on the Agricultural Department's certificate and stamp, but insist that the name of the inspecting veterinarian shall be hand written. It is further demanded that each of the barrels shall be sealed at both ends, at one end in the following way: First, the stamp of the Department of Agriculture pasted on in the center of the barrel head, then by a wire drawn across the head, through the chine, and the ends brought together and secured by lead seal right on the Agricultural Department's stamp, this stamp as well as the lead seal to be covered with the usual protecting tin plate; at the other end of the barrel, wire and lead seal only to be used.

A New Rubber Plant.—Consul Atwell, of Roubaix, on October 20, 1899, says:

During last week's session of the Academy of Science, papers were read by Messrs. J. Dybowski and G. Frou, on a gutta-percha-producing plant, a native of northern China, which is cultivated in the colonial garden, Paris.

Gutta-percha has been produced almost exclusively up to the present by trees growing in the Dutch East Indies, and attempts to acclimate these trees in the French colonies have not been very successful. The rubber trees of Java require conditions that render their culture impossible in all but a few of the colonies.

The discovery of a gutta-percha producer that may be easily acclimated is thus a matter of great importance.

The advantage of ready growth in a moderate climate is claimed for the plant reported to the academy. It is known as the *Eucomia illinoides*, and the fruit is said to contain 27.34 per cent of gutta-percha of excellent quality.

Argentine Exports of Sheep and Mutton.—Minister Finch, of Montevideo, under date of September 26, 1899, sends the following statement (as printed in a local paper) of the exportation of sheep, frozen and live, from Argentina to Brazil, Europe, United Kingdom, and South Africa from January 1, 1899, to August 31, 1899:

Month.	Sheep.	
	Frozen.	Live.
January.....	145,582	47,491
February.....	118,760	34,929
March.....	157,383	74,670
April.....	185,678	77,925
May.....	107,337	86,851
June.....	306,258	44,057
July.....	107,797	29,934
August.....	202,171	17,430
Total.....	1,330,966	412,996
Same months of 1898.....	1,581,412	420,472

Prevention of Rot in Potatoes.—Consul Hughes sends the following from Coburg, October 23, 1899:

A simple method of preventing rot and other diseased conditions of winter seed potatoes is in use by the peasants of Thuringia. Those potatoes that rot easily in the cellar in winter are made better able to resist diseased conditions and cold by being laid in a sunny

place, as far apart from each other as possible. They are turned over morning and night until they become thoroughly green, and are then placed in the cellar for the winter. Potatoes treated in this manner do not rot and can withstand a great amount of cold without freezing. Early potatoes thus treated do not sprout in the cellar, and so retain their full strength. In February, the potatoes are taken from the cellar and put in a partially warmed room until planting time. When planted, they will sprout stronger and quicker than potatoes not so treated, and the crop will be larger and better.

Agriculture in the Yukon.—Vice-Consul Morrison, of Dawson City, sends, under date of October 16, 1899, a report on the results of agricultural experiments, written by a resident of that city, which reads, in part, as follows:

Grain has done exceptionally well, being well filled, and I see no reason why it should not be extensively and successfully grown here. As far as my observations go, the climate is as suitable for raising winter wheat as in any place in the Northwestern or the Northern States of America. From my experience of the last two years, I see no reason why this country should not be able to produce its own vegetables and grains.

As for flowers, the success I have had proves that all hardy annuals will do well. The coming year I intend planting several hundred hybrid roses; also summer flowering bulbs, a large variety of other hardy and half-hardy annuals, and some of the hardy perennials. Small fruits, such as strawberries, currants, blackberries, and raspberries, should do well. Currants, raspberries, cranberries, strawberries, and blueberries grow wild here.

Crops in Ontario.—Commercial Agent Hamilton sends from Morrisburgh, November 25, 1899, a printed report of crop conditions in Ontario from August to October. The statement of the yields of crops is as follows:

Crop.	Yield.	Per acre.
Fall wheat.....bushels...	14,439,827	13.8
Spring wheat.....do.....	7,041,317	17.7
Barley.....do.....	14,830,891	30.2
Oats.....do.....	89,897,724	38
Rye.....do.....	2,284,846	16.6
Pease.....do.....	15,140,790	20.4
Buckwheat.....do.....	2,203,299	16.7
Beans.....do.....	651,009	16.1
Potatoes.....do.....	19,933,366	119
Mangel-wurzel.....do.....	20,898,387	391
Carrots.....do.....	3,674,035	309
Turnips.....do.....	57,878,390	377
Corn for husking (in the ear).....do.....	21,673,234	65
Corn for silo and fodder (green).....tons...	1,697,755	9.8
Hay and clover.....do.....	3,498,705	1.4
Apples.....bushels...	19,126,439	3.02
Tobacco.....pounds...	2,241,562	1.016

Tenders for Timber in Cape Colony.—According to the Cape Town Government Gazette of October 24, 1899, transmitted by Consul-General Stowe, tenders are invited for the supply of the following timber required for the service of the railway department:

Eight thousand deals, 8,000 flooring boards, 700 pitch-pine logs, 240 teak logs, 943 teak planks, 87,000 superficial feet of pine boards, 1,200 cubic feet of stinkwood. Forms of tender, conditions of contract, and all other particulars may be obtained at the railway stores, Cape Town, Port Elizabeth, and East London. Sealed tenders (in original only), addressed to the controller and auditor-general, Cape Town, marked outside "Tender for timber," will be received up to noon January 11, 1900. The lowest or any tender will not be necessarily accepted.

Trade of Fiji in 1898.—Consul Hill, of Amsterdam, sends, under date of November 17, 1899, a clipping from the Samoa Herald of September 9, which reads in part as follows;

The blue book of 1898 shows a prosperous condition of trade and commerce in the Fiji Islands. Capital has been invested and has given a return, property is secure, and the law courts command respect. Exports exceed imports, and the population is increasing. The total revenue of the islands for 1898 was £94,164 (\$458,249) and the expenditures £87,594 (\$426,276), giving a surplus of £6,570 (\$31,973).

The population of the islands was 121,738, of which 3,927 were Europeans.

The total imports for the year amounted to £234,849 (\$1,142,893); and the exports, £534,105 (\$2,599,222)—all the trade being with Europe, Great Britain and colonies, and the South Sea Islands.

Copra exported in 1898 amounted to £63,139 (\$307,266); fruit, £25,477 (\$123,984); distilled spirits, £13,886 (\$67,576); sugar, £400,883 (\$1,950,897); maize, £2,473 (\$12,035); peanuts, £2,614 (\$12,721); pearl shell, £2,328 (\$11,329).

Steel and Iron Rails Wanted in Australia.—Consul Goding writes from Newcastle, New South Wales, November 7, 1899:

There is a great scarcity of steel and iron rails in this colony. Should our manufacturers look into the matter at once, I believe they could secure a large order—perhaps £200,000 (\$973,300) worth. The colonial authorities are very anxious to obtain rails, and, I am led to think, may consider favorably orders from the United States.

The consul desires this notice to have the widest circulation possible, as he regards this as an excellent opportunity for American manufacturers.

Cotton Mills in India.—Consul Fee sends the following from Bombay, October 13, 1899:

A meeting of the Mill Owners' Association of Bombay has been called for the 17th instant, to consider the question of the "short-time" working of local cotton mills. The proposition that will be brought before the meeting is that, in consequence of the failure of the cotton crops and the present high prices of cotton, the local mills should be worked only four days per week. Messrs. Greaves, Cotton & Co., agents for a group of seven mills, took the initiative to-day by closing them. They have resolved to work only on Mondays, Tuesdays, Thursdays, and Fridays.

New Russian Railways.—Vice and Acting Consul Monaghan writes from Chemnitz, October 25, 1899:

Russia has sent engineers to the left bank of the Ural River to survey the country lying between Orenburg and Taschkent. She intends to build a railroad to connect these two cities. This line will cross Turkestan. Another line is to run from Alexandrowo through the Transcaspian country along the left bank of the Amoo as far as Tschardschin. The object of these railroads is to connect Russia with the commercial centers of middle Asia, and ultimately with the Indian Ocean. These railroads will work wonders in developing the cotton-producing countries through which they will pass—*i. e.*, Turkestan, Bokhara, and Khiva.

Electric Tramway in Calais.—Consul Milner, of Calais, under date of October 30, 1899, informs the Department that a company organized at Paris is arranging to establish an electric railway in Calais. The equipment has not yet been purchased, and the consul thinks that United States manufacturers may wish to bid. The old tram cars now in use are of American make.

Inquiry for Wisconsin Tobacco in Belgium.—Consul-General Lincoln sends the following from Antwerp, November 24, 1899:

Messrs. Schroder & Voorwinden, tobacco dealers of Antwerp, write me for the names of exporters of Wisconsin tobacco. They say they are especially interested in this kind of tobacco, and can find ready sales for it. They would like to establish connections with one or more American houses.

Failures in the Diamond Trade at Antwerp.—Consul Hill writes from Amsterdam, November 17, 1899:

Advices from Brussels state that two failures in the diamond trade have taken place at Antwerp, and that within the next fortnight other suspensions will be announced. On Wednesday evening a concourse of men, estimated at 2,500, without work, marched through the streets of Antwerp. The entire stock of diamonds is said to be exhausted, and by March a rise in price of 100 per cent is predicted. In Amsterdam, 2,000 men have been laid off, but no failures are reported.

Export Duty in Guatemala.—Vice-Consul-General James writes from Guatemala, October 28, 1899, that on the 20th instant a decree was issued by the President imposing an export duty on the following articles:

Bananas	per bunch...	\$0. 10
Cleaned coffee.....	per 100 pounds...	1. 00
Rubber (gross weight).....	do.....	10. 00
Hides.....	each...	. 50
Deer and sheep skins (gross weight).....	per 100 pounds...	3. 00

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
E. Schneegans, Saigon.....	Sept. 26, 1899	Rice market.....	Department of Agriculture.
Do.....	Oct. 10, 1899	do	Do.
P. M. De Leon, Guayaquil.....	Oct. 25, 1899	Dairying	Do.
J. L. Doty, Tahiti.....	Sept. 20, 1899	do	Do.
J. Goodnow, Shanghai.....	Oct. 16, 1899	do	Do.
J. P. Bray, Melbourne.....	Oct. 24, 1899	do	Do.
H. N. Allen, Seoul.....	Oct. 23, 1899	do	Do.
W. D. Hunter, Cairo.....	Oct. 31, 1899	do	Do.
W. W. Touvelle, Belfast.....	Nov. 9, 1899	do	Do.
R. F. Patterson, Calcutta.....	Oct. 16, 1899	do	Do.
J. P. Beecher, Havre.....	Nov. 14, 1899	do	Do.
A. W. Swalm, Montevideo.....	Oct. 27, 1899	do	Do.
A. A. Winslow, Liege.....	Nov. 21, 1899	do	Do.
G. F. Lincoln, Antwerp.....	Nov. 24, 1899	do	Do.

FOREIGN REPORTS AND PUBLICATIONS.

Commerce of Mozambique in 1898.—The Deutsches Handels-Archiv, Berlin, October, 1899, has the following report:

The following values for the import and export trade of Mozambique for the year 1898 are taken from Portuguese statistical returns:

	Marks.
Imports.....	2, 618, 198= \$623, 131
Exports.....	1, 369, 137= 325, 855

For the year 1897, the corresponding values were:

	Marks.
Imports.....	2, 277, 347= \$542, 009
Exports.....	2, 408, 566= 573, 239

The past year has opened no new markets to European trade. The sudden and unfortunate depreciation of Portuguese money, almost 33½ per cent, must be cited as one of the chief causes preventing greater expansion. In the retail trade with the negroes, moderate prices must obtain, and high entrance fees often make it impossible for dealers to sell; naturally, the import of goods not strictly necessary to the trade is much curtailed. The high customs rates existing since 1893 are little adapted for promoting foreign trade. Provisions of every kind for Europeans are imported from the motherland; but, in consequence of its poorly developed industry, Portugal can not supply the market with the classes of goods demanded for the negro trade. These—partly of European, partly of Indian origin—are imported through dealers of Bombay. In the course of years, the Indian dealer has gained a firm foothold; he does not limit his trade to Indian goods, but handles European articles, often in original cases.

Sales of powder and weapons were free for a part of the year, but dealers did not take advantage of this. Supplies of flintlock weapons are moderately large. The Companhia de Nyassa, at Ibo, controls the greater part of the supply of powder on hand. The powder mill established by the Société des Explosifs Africains, in Beira, built mainly with French capital, has a monopoly from the Portuguese Government for the manufacture of powder for Mozambique; European powder thus can not compete, in point of cheapness. Besides ordinary powder, the factory makes a kind of dynamite. Germany formerly sent large quantities of powder to Mozambique.

The system of money introduced in the province in 1896 remains in principle the same, although most of the Portuguese silver has found its way back to Portugal. To-day only a third of the circulating money is silver, the rest being paper money of the Banco Nacional Ultramarino. The export of silver was forbidden a few months ago. The Portuguese bank calculates exchange on Lisbon at 2 per cent premium; postal orders, for the time being, to Lourenço Marquez, 10 per cent; to Inhambane, 11½ per cent; to Quilimane, 4½ per cent; Mozambique, 3 per cent.

The export trade during the past year has suffered from various causes besides unfavorable conditions of weather and exchange, chiefly the outbreaks among the negro tribes of the interior and the prohibition of the export of cooked rubber. The india-rubber trade is almost exclusively in German hands, and only small

quantities are sent to London by the Indian dealers. In consequence of the wasteful process practiced by the natives, the quality deteriorated until the Portuguese Government on the 1st of July of last year prohibited the export of inferior gum. The prohibition was repealed for a time to permit the people of the interior to send their goods to the coast, but entered in force again on January 1, 1899. In future, only absolutely pure gum can be handled and exported.

The earthnut (peanut) harvest in Parapet and Mozambique approximated 60,000 sacks; it is estimated that some 20,000 sacks rotted in the ground, or failed to find their way to the coast.

Tortoise shell, wax, and gum copal are exported in limited quantities. Cattle raising is carried on to a limited extent in the northern part of Mozambique, but not sufficient to meet the small demands of Europeans. The deficit was supplied for a long time by cattle from Madagascar, and later by small shipments from Dutch East Africa.

The hinterland has again attracted the attention of British searchers for gold. A British company, ostensibly established by Johannesburg firms, has obtained several grants from the Sultan in the district of Umbamella. The company is trying to obtain the consent of the Portuguese Government for the opening of these lands.

Steamship communication with ports of Mozambique is mostly in the hands of the German East African Line. The French line Messageries Maritimes maintains one coast steamer which connects four times a week with the principal steamer at Diego Suarez. The share of this company in the freight business is very small. The British India Steam Navigation Company also runs a small steamer monthly from Bombay to Mozambique. The following table gives the shipping movement for 1898:

Nationality.	Steamers.		Sailing vessels.	
	Number.	Registered tons.	Number.	Registered tons.
German	69	183,800	.....	.....
British	10	14,777	2	898
French	22	33,000	1	556
Portuguese	1	67	.....	.....
Norwegian .....	.....	.....	1	1,500

Papyrisette.—The following is from Feilden's Magazine, London, September, 1899:

A new roofing and flooring material has been invented by Mr. Gehre, who was the inventor also of papyrolith, over which the newer material is said to present advantages. Papyrisette can be adapted for various purposes; but it is specially intended to serve as a solid, impermeable, and jointless roof or floor, which, when laid down, will present a smooth surface, as if made in one continuous layer. It is claimed to be absolutely fireproof and a nonconductor of cold or sound, and, although as hard as stone, it has a soft linoleum-like feeling to the foot and is noiseless. As there are no grooves or joints in the material, no dust, vermin, or fungi can accumulate, and its weight is much less than that of stone or cement. Two hundred and twenty pounds of this preparation in a powdered form, when mixed for use and spread to a thickness of 0.394 inch, will cover a surface of 91 ¼

square feet. Moreover, it can be cut, sawn, and bored; can be given any desirable tint; and can be made to look like mosaic or marble. The inventor has constructed a light iron frame, on which the material can be laid, in the form partly of plates and partly of mortar, which, when united, produce a smooth, continuous surface for roofing purposes. It is adapted to cold as well as tropical regions, and its stone-like qualities prevent it from being destroyed by mice or other vermin. The material will not contract or warp after having been laid down, and it is elastic, light, and inexpensive.

Trade of Canary Islands.—In a British Foreign Office report (annual series No. 2278), the following information is given:

The high rate of exchange ruling during several months of 1898 greatly affected the import trade of the Canary Islands. Reduced stocks of goods were kept, and orders for only what was absolutely needful were given. No official statistics whatever as to imports and exports are published. The following information, derived from various private sources, may be taken to be approximately correct:

Total value of imports into Las Palmas during 1898.

Country of origin.	Value.	
	<i>Pesetas.*</i>	
Great Britain.....	5,578,182	\$780,945
Spain	1,683,745	235,725
Germany.....	786,430	110,100
Morocco	775,620	108,587
Argentine Republic.....	578,190	80,947
France.....	423,089	59,232
United States.....	408,870	57,242
Norway and Sweden.....	288,000	40,320
Italy.....	156,505	21,911
Belgium.....	145,800	20,412
Other countries.....	135,860	19,020
Total.....	10,960,291	1,534,441

* The value of the peseta is taken at 14 cents.

The chief imports were:

Articles.	Value.	
	<i>Pesetas.</i>	
Cereals	1,630,975	\$228,337
Cotton goods.....	773,481	108,287
Manures.....	585,060	81,964
Woolen goods.....	226,955	31,774
Machinery.....	176,665	24,733
Soap.....	150,680	21,095
Cement	131,320	17,385
Alcoholic liquors.....	366,025	51,244
Iron and other metals.....	57,414	8,038
Paint	50,221	7,031
Mercery and haberdashery.....	28,913	4,048

The coal trade is entirely in British hands. The quantity imported in 1898 was about 213,000 tons.

The enormous quantities of bananas, tomatoes, and potatoes shipped to London and Liverpool represent the principal sources of wealth of the islands. The banana export of Las Palmas has increased from 350,000 bunches in 1896 to 511,500 bunches in 1898. Potatoes and tomatoes are the chief agricultural products of the other islands. Canary sugar to the value of about 1,000,000 pesetas (\$140,000) goes to Spain, where, as a home product, it is admitted free of duty. Cochineal is still exported in small quantities, bringing 11d. to 1s. (22 to 24.3 cents) per pound.

American Printing Machinery in Great Britain.—Feilden's Magazine, London, September, 1899, in an article on paper and printing industries, says:

The London branch of Messrs. R. Hoe & Co. has recently received an order from the proprietors of the Scotsman, Edinburgh, for two quadruple machines and two four-roll presses. Each of these machines will be capable of producing four, six, or eight page papers at the rate of 48,000 per hour; ten, twelve, fourteen, or sixteen page papers, all inset, at 24,000 per hour; and twenty or twenty-four page papers at 12,000 per hour. The firm has also received orders from the Birmingham Daily Post for one of their four-roll machines; from the Hull Daily Mail for a quadruple press; and one three-roll machine for the Adelaide Observer. Each of these machines is capable of producing four, six, eight, ten, and twelve page papers, all inset, at 24,000 per hour; and sixteen, twenty, and twenty-four page papers at 12,000 per hour. There is also on order one two-roll machine for the Southern Echo and Hampshire Advertiser, Southampton. At the present time, there are in course of construction in the London works of the Hoe Company the following list of presses: Four quadruple machines for the Daily Mail, London; two quadruple machines for the Scotsman, Edinburgh; one quadruple machine for the Daily Mail, Hull; two four-roll machines for the Sporting Chronicle, Manchester; two four-roll machines for the Scotsman, Edinburgh; one four-roll machine for the Yorkshire Post, Leeds; one four-roll machine for the Aberdeen Free Press; three four-roll machines for the News of the World, London; one four-roll machine for the Birmingham Post; one three-roll machine for the Nottingham Guardian; one three-roll machine for the Adelaide Observer; one two-roll machine for the Southern Echo, Southampton; one single-roll machine for the Daily Mail, London; one single-roll machine for the North British Daily Mail, Glasgow; and two single-roll machines for the Harmsworth Magazine, London. This list is instructive in a two-fold sense, showing not only how much our American competitors are gaining in this country, but how much our British printing machinists are losing.

New Iron Foundry in Italy.—The following is from Feilden's Magazine, London, September, 1899.

The establishment of an extensive new iron foundry at Elba, in Italy, is a matter which should not escape the attention of British producers of pig and other iron and of iron founders' material. The chief object of the proprietary company is the production of cast iron, and the company's formation is justified by the fact that, owing to the activity that reigns in Italian metallurgical works, the imports of this article have been gradually increasing during the last few years. On the basis of the latest available figures, it is reckoned that Italy will import this year about

18,000,000 lire (\$3,474,000) worth of cast iron alone, without taking into account the large quantity of iron and other metals imported in a partly manufactured form. The new enterprise will therefore constitute a big stride towards the emancipation of the Italian metallurgical industry, and, as the largest portion of the 15,000,000 lire (\$2,895,000) of capital is understood to have been subscribed by the powerful group of its foreign promoters, the company will be financially a strong one.

Shoes and Clothing in Manila.—The French consul at Manila writes to the *Revue du Commerce Extérieur*, Paris, October 8, 1899, that shoes form one of the chief articles of commerce at Manila since the entrance of the American troops. The 35,000 to 40,000 men, regulars or volunteers, are forced to constantly renew their foot wear; so far, Spanish manufacturés have mainly profited by this trade.

In a letter appearing in the *Revue* of September 16, the consul says:

The few tailors now established in the city have been overwhelmed with orders, which, for want of capable workmen, they have been unable to fill. The American army to-day forms their chief clientele. Uniforms of white, and especially of khaki, are made everywhere in proportion as troops arrive from the United States or return to Manila from the front.

Suits of cloth or light wool are ordered from the few European tailors. It is difficult to find out just what the amount of importation of these cloths is, but the kind made in France for summer wear is too heavy for this climate. A light woolen cloth ought to be especially manufactured for tropical countries, where the warm and moist temperature requires the use of materials extremely thin, but at the same time calculated to ward off chills.

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PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—ADVANCE SHEETS, CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

IV.—EXPORTS DECLARED FOR THE UNITED STATES, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months.

V.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880-81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885-86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Flies in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Slave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.]

* Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

VIII PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia. Part IV. Africa. Part V. Australasia and Polynesia. (Parts III, IV, and V not yet published.)

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries, Fires in Spanish America, Fire and Building Regulations, Gas in Foreign Countries, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation, Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston makes the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to \$20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States. The value of the Indian rupee, although calculated according to law at the value of the pure metal contained therein, has a commercial value above the value of the silver bullion; consequently the value for customs purposes is determined in each case by the consular certificates attached to the invoice of exports from that country to the United States."

The following statements, running from January 1, 1874, to January 1, 1900, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account

that the ruble of Russia, for instance, fluctuated from 77.17 cents in 1874 to 37.4 cents in April, 1897, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, 1882, and 1891-95 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic*.	Gold and silver..	Peso.....	\$0.96,5	Gold—Argentine (\$4.82,4) and $\frac{1}{2}$ Argentine; silver—peso and divisions.
Austria-Hungary†....	Gold	Crown.....	.20,3	Gold—20 crowns (\$4.05,2) and 10 crowns.
Belgium	Gold and silver..	Franc.....	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil.....	Gold	Milreis.....	.54,6	Gold—5, 10, and 20 milreis; silver— $\frac{1}{2}$, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar.....	1.00	
British Honduras.....	do	do	1.00	
Chile.....	do	Peso.....	.36,5	Gold—escudo (\$1.25), doubloon (\$3.65), and condor (\$7.30); silver—peso and divisions.
Costa Rica.....	do	Colon.....	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centesimos.
Cuba	Gold and silver..	do	.92,6	Gold—doubloon (\$5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Egypt.....	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	do	Mark.....	.19,3	Gold—10 and 20 marks (\$1.93 and \$3.85,9).
France	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark.....	.23,8	Gold—5, 10, and 20 marks.
Great Britain.....	do	Pound sterling..	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver..	Drachma.....	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	do	Gourde.....	.96,5	Silver—gourde.
Italy.....	do	Lira.....	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan ‡.....	Gold	Yen.....	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia.....	do	Dollar.....	1.00	
Netherlands§.....	Gold and silver..	Florin.....	.40,2	Gold—10 florins; silver— $\frac{1}{2}$, 1, and 2½ florins.
Newfoundland	Gold	Dollar.....	1.01,4	Gold—\$2 (\$2.02,7).
Portugal.....	do	Milreis.....	1.08	Gold—1, 2, 5, and 10 milreis.
Russia |.....	.....do	Ruble.....	.51,5	Gold—imperial (\$7.718) and $\frac{1}{2}$ imperial (\$3.80); silver— $\frac{1}{4}$, $\frac{1}{2}$, and 1 ruble.
Spain.....	Gold and silver..	Peseta.....	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster.....	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	Gold	Peso.....	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela.....	Gold and silver..	Bolivar.....	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875, the gold standard prevailed.

† The gold standard was adopted October 1, 1892. (See CONSULAR REPORTS No. 147, p. 623.) Values are still, however, frequently expressed in the florin or gulden, which is worth 2 crowns or 40.6 cents.

‡ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

§ See note to table of fluctuating currencies.

| For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896-97, p. 254.

XII VALUES OF FOREIGN COINS AND CURRENCIES.

B.—Countries with fluctuating currencies, 1874-1890.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1890; bolivi- ano there- after.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6	.....	.....
China.....	Silver.....	Halkwan tael.	1.61	1.61	.....	.....	.....	.....
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupce.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	Gold.....	Yen.....	.99,7	.99,7	.99,7	.99,7	.....	.....
	Silver.....		.....	.....	.....	.....	.87,0	.86,9
Mexico.....	do.....	Dollar.....	1.04,78	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡.....	Gold and Silver.	Florin.....	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; bolivi- ano there- after.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....	.....	.....	.....	.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.94,3
India.....	Silver.....	Rupce.....	.37,8	.35,7	.34,6	.32,2	.32,3	.40,4
Japan.....	Gold.....	Yen.....	.....	.....	.99,7	.99,7	.99,7	.99,7
	Silver.....		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico.....	do.....	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies.

Countries.	Monetary unit.	1897.				1898.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.47,4	\$0.46,8	\$0.44,3	\$0.41,2	\$0.42,4	\$0.40,9	\$0.41,8	\$0.43,6
Central Amer-ica.	Silver peso.....	.47,4	.46,5	.44,3	.41,2	.41,4	.40,9	.41,8	.43,6
China.....	Amoy tael.....	.76,7	.75,7	.71,7	.66,4	.68,5	.66,2	.67,6	.70,6
	Canton tael.....	.76,5	.75,5	.71,5	.66,4	.68,3	.66	.67,4	.70,4
	Chefoo tael.....	.73,3	.72,4	.68,6	.63,7	.65,5	.63,3	.64,6	.67,5
	Chinkiang tael..	.74,9	.73,9	.70	.65,1	.66,9	.64,6	.66	.69
	Fuchau tael.....	.70,9	.70	.66,3	.61,6	.63,4	.61,2	.62,5	.65,3
	Halkwan tael....	.78	.77	.73,1	.67,8	.69,7	.67,3	.68,8	.71,8
	Hankau tael.....	.71,7	.70,8	.67,1	.62,3	.64,1	.61,9	.63,2	.66
	Ningpo tael.....	.73,7	.72,8	.68,9	.64	.64,3	.63	.65	.67,9
	Niuchwang tael.	.71,9	.71	.67,2	.62,5	.65,9	.62	.63,4	.66,2
	Shanghai tael...	.70	.69,1	.65,5	.60,8	.62,6	.60,4	.61,7	.64,5
Colombia.....	Silver peso.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Ecuador.....	do.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
India*.....	Silver rupee.....	.22,5	.22,2	.21,1	.19,6	.20,1	.19,1	.19,9	.20,7
Japan.....	Silver yen.....	.51,1	.50,5						
Mexico.....	Silver dollar.....	.51,5	.50,8	.48,2	.44,6	.46	.44,4	.45,4	.47,4
Persia.....	Silver kran.....	.08,7	.08,6	.08,2	.07,6	.07,8	.07,5	.07,7	.08
Peru.....	Silver sol.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Russia.....	Silver ruble.....	.37,9	.37,4						

Countries.	Monetary unit.	1899.				1900.
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.
Bolivia.....	Silver boliviano.....	\$0.43,9	\$0.43,4	\$0.44,3	\$0.43,6	\$0.42,7
Central America.....	Silver peso.....	.43,9	.43,4	.44,3	.43,6	.42,7
China.....	Amoy tael.....	.71	.70,2	.71,6	.70,5	.69,1
	Canton tael.....	.70,8	.70	.71,1	.70,3	.68,9
	Chefoo tael.....	.67,9	.67,2	.68,4	.67,4	.66,1
	Chinkiang tael..	.69,3	.68,6	.69,9	.68,9	.67,5
	Fuchau tael.....	.65,6	.65	.66,2	.65,2	.64
	Halkwan tael....	.72,2	.71,4	.72,8	.71,8	.70,3
	Hankau tael.....	.66,4	.65,7	.67	.66	.64,7
	Ningpo tael.....	.68,2	.67,5	.68,8	.67,8	.66,5
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8
	Shanghai tael...	.64,8	.64,1	.65,4	.64,4	.63,1
Colombia.....	Swatow tael.....	.65,5	.64,9	.66,1	.65,1	.63,9
	Takao tael.....	.71,4	.70,7	.72	.71	.69,6
	Tientsin tael....	.68,8	.68	.69,4	.68,3	.67
	Silver peso.....	.43,9	.43,4	.44,3	.43,6	.42,7
Ecuador.....	do.....	.43,9	.43,4	.44,3	.43,6	.42,7
India*.....	Silver rupee.....	.20,8	.20,6	.21	.20,7	.20,3
Mexico.....	Silver dollar.....	.47,7	.47,2	.48,1	.47,4	.46,4
Persia.....	Silver kran.....	.08,1	.08	.08,2	.08	.07,9
Peru.....	Silver sol.....	.43,9	.43,4	.44,3	.43,6	.42,7

* The commercial value of the rupee to be determined by consular certificate.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude	Portugal.....	4.422 gallons.
Ardeb.....	Egypt	7 6907 bushels.
Are.....	Metric.....	0.02471 acre.
Arobe	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25 3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25 4024 pounds
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine	Russia.....	28 inches
Arshine (square).....	do.....	5.44 square feet
Artel	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11 4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovets.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bouw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333½ (1½) pounds.
Do*.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, and Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro	Central America.....	4.2631 gallons
Centner	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.

* More frequently called "kin." Among merchants in the treaty ports it equals 1.33½ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Densiatine.....	Russia.....	2.6997 acres.
Do.....	Spain.....	1,599 bushels.
Drachme.....	Greece.....	Half ounce.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1,5745 bushels.
Do.....	Chile.....	2,575 bushels.
Do.....	Cuba.....	1,599 bushels.
Do.....	Mexico.....	1,54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do.....	Uruguay (double).....	7,776 bushels.
Do.....	Uruguay (single).....	3,888 bushels.
Do.....	Venezuela.....	1,599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddan.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2,5096 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	Do.....	2.471 acres.
Hectoliter:		
Dry.....	Do.....	2.838 bushels.
Liquid.....	Do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	6 feet.
Kilogram (kilo).....	Metric.....	2.2046 pounds.
Kilometer.....	Do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Koku.....	Japan.....	4.9629 bushels.
Korree.....	Russia.....	3.5 bushels.
Kwan.....	Japan.....	8.28 pounds.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	113½ bushels.
Do.....	Spain (salt).....	4,760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2,115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Guiana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Load.....	England (timber).....	Square, 50 cubic feet; unheaved, 40 cubic feet; 1 inch planks, 600 super- ficial feet.
Manzana.....	Costa Rica.....	1½ acres.
Do.....	Nicaragua and Salvador.....	1.727 acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles.
Do.....	Denmark (geographical).....	4.61 miles.
Milla.....	Nicaragua and Honduras.....	1.1493 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¼ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castile.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Pund (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¾ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	0.02451 acres.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	11.9305 inches.
Sho.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (see cua- dra).
Sun.....	Japan.....	1.193 inches.
Tael.....	Cochin China.....	590.75 grains (troy).
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tsubo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914117 yard.
Do.....	Central America.....	32.87 inches.
Do.....	Chile and Peru.....	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Verges.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vloeka.....	Russian Poland.....	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.417 gallons.
 Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.

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THE IRON AND STEEL TRADE IN GERMANY.

The rapid advance in prices of iron and steel in Germany has been so great as to disturb business and to materially increase the cost to consumers. The demand is so far in excess of the supply that many works will only be able to fill half their orders in iron and steel in the coming six months. In many instances, it has already been necessary to limit the output, owing to the impossibility of obtaining the raw material. Should this scarcity of iron continue, it will not be long before thousands of laborers will be without work. It is therefore desired that the duties on iron in Germany should be temporarily suspended. The wish is that the importation from abroad of this metal—which has become so valuable—should be facilitated as much as possible, because the German output of iron can not supply the present demand. This is, of itself, a proof of the enormous development of the German industries which use iron and steel in their manufactures. In 1872, the output of pig iron in Germany was 1,988,000 tons; in 1892, it had increased to 4,986,000 tons; and in 1898, according to the provisional returns, it was 7,215,900 tons. But in the United States the production of pig iron has advanced still more in the same period, rising from 2,589,000 tons in 1872 to 11,962,300 tons in the last year. The smallest increase was in England, where the output of iron was about 6,850,000 tons in 1872 and had only risen to 8,937,000 tons in 1897. It is therefore hoped that the German import duties on iron will be temporarily suspended and a helper in time of need be found for the present development of German industries by participating in the enormous output of iron

from abroad. It is true, however, that one must take into consideration the fact that in England and more especially in the United States the consumption of iron is just now extraordinarily heavy. But, at all events, anything which tends to facilitate the importation of iron at the present time would prove of very material benefit to those German industries that consume it. It would at the same time prove a weighty and necessary social-political measure if it should transpire, as is asserted in industrial circles, that, unless this course is adopted, many works will have to lie idle for months, owing to their inability to obtain the necessary raw material.

This scarcity of iron is a sign of the continuous overloading of almost all iron industries with orders. The demand is especially due to the requirements of the railway systems and of the ship-building yards. At the present time, numerous new lines of railway are being constructed, while on those already existing improvements of all kinds, which have long been deferred, have become a matter of necessity. Electrical industries have simultaneously become gigantic, and to this is added the fact that modern architecture turns more and more to the utilization of iron, and that, too, in enormous quantities. The Imperial Government's orders will decrease materially in a short time, and then, perhaps, the present strong competition in iron industries will become more normal through the falling off of orders. For instance, one of the great Dortmund iron works had last year to increase its hands to the extent of 1,500; and the value of its orders, which on the 30th of June, 1898, amounted to 22,000,000 marks (\$5,236,000) in round figures, stood at about 29,000,000 marks (\$6,902,000) on the 31st of July of the current year. A large Saxon machine factory has at present about 15,000,000 marks' (\$3,570,000) worth of orders on hand. This gives some idea of the activity prevailing in important branches of the iron industries in this Empire.

GEO. SAWTER,
Consul.

GLAUCHAU, *October 30, 1899.*

A GERMAN EXPERT VIEW OF THE AMERICAN IRON AND STEEL INDUSTRIES.

The German press, which, for the most part, has until recently regarded with more or less suspicion the purposes and probable results of the commercial exposition at Philadelphia, and applauded the reply of Herr Commerciénrath Julius van der Zypen, of Cologne, declining his invitation, has changed front very noticeably since the reports have been received describing the opening ceremonies, the nature and scope of the exposition itself, and especially the cordial

and hospitable welcome that was accorded to the German delegates and the wish which was generally expressed that a better understanding might be reached on certain technical questions which relate to trade conditions between the two countries.

It is now generally recognized that the Philadelphia exposition has been a most valuable object lesson for merchants and manufacturers of all countries; that it has been organized and managed on broad, liberal principles; and that it would have been a serious error if Germany had followed the lead of its reactionary press and refused to participate in an event from which the general cause of international commerce is certain to derive such important and lasting advantage. The weight of newspaper opinion already favors the creation of a commercial museum for Germany, organized and managed on the same lines as the institution in Philadelphia, which has within so brief a period accomplished such important results.

Not less eagerly read and discussed are the private letters and unofficial reports of the German delegates, who, since the first week of the exposition, have traveled over the United States, visiting shipyards, shoe factories, iron and steel works, and other important industrial establishments. Their correspondence indicates that they have been everywhere cordially received, shown through everything that they wished to see; and, being for the most part scientific experts in the industries which they have examined, they have grasped accurately and promptly the full meaning of all that they have seen.

Among numerous examples of similar correspondence that have appeared recently in the German press, there is selected for translation a report of an interview with the director of a leading German steel plant, which, as published in the *Berliner Tageblatt* of November 2, discourses as follows on the iron and steel industries of the United States:

Being asked next concerning the significance that the Commercial Museum exposition in Philadelphia bears from a German standpoint, the director stated that it had by no means the anticipated one-sided character of a source of information for Americans only, but was of equal interest to foreigners. Concerning the industrial situation in the United States, the impression derived by a foreigner is that the present remarkably favorable conditions are solid, legitimate, and likely to be permanent. This is particularly true of the mining and metal industries. An important element in the present unparalleled prosperity of these interests in America is the strong, steady, continuous demand for metals, particularly those used in electrical machinery and installations. It is also true that America far surpasses us in the use of iron and steel for building purposes.

It is undeniable that the American iron works operate under decidedly more favorable conditions of production than our own. An important factor in these conditions is the fact that the United States possesses far richer and more widely distributed iron-ore deposits than Germany. While we are largely dependent upon

imported ores—especially Swedish—the American iron works find their raw material at home. To this must be added the other important advantage, that the construction and equipment of their iron and steel works far excel those of Germany and indeed every other European country. In America, we find what seems to us an astonishing substitution of machinery for manual labor. Only in the most necessary details is hand labor now employed. Such a vast and skillful application of machinery offers especial advantage in a time like this, when manual labor is costly and difficult to obtain.

Finally comes the enormous advantage which the Americans enjoy through the high development of their railway system. The industries have at their command a railway system which far surpasses in cheapness and efficiency of service anything known in Europe. The first sight of the tracks and equipment of an American railroad makes upon a German an imposing impression. Their freight cars of all classes far surpass in size and carrying capacity those of the German railways. Their track system is relatively broader and stronger than ours. Special tracks for freight trains secure rapid, almost unbroken, traffic. A widely developed system of branch and side railways (feeders) sustains the traffic of the principal lines. The rates for freight are excessively low. While on the German railways the cost of freight per ton kilometer is (excepting some unimportant special tariffs) 2.2 pfennigs, in America the corresponding rate is only 0.6 pfennig per ton kilometer.

Under these conditions, the German iron industry finds in that of the United States its greatest, most important, and most dangerous competitor. Just at present, the full force of this competition is not apparent because there is an enormous home demand for iron and steel in America. Several shipments of American foundry pig iron to Germany prove, however, that we have in future to reckon with the competition of American metal here at home. Those shipments were ordered by German consumers of pig iron because they were in urgent need of raw material. The belief that the competition of the American iron industry is not yet to be seriously feared may still be cherished in spite of the great development of trusts, concerning whose productive capacity many large figures have been published which it is impossible to verify and which are probably exaggerated.

But where once a relapse occurs in the American market or a weakening of demand in the world's metal markets, then we shall have to reckon with a sharp and powerful competition from America, especially in heavy plates, structural steel and iron, and rails, for the production of all these in the United States is on an enormous scale. Above all is this true in respect to rails, the production of which is developed to an astounding degree. Works which produce only one type of rails are not uncommon.

To the question, How can the German market protect itself against the future competition of America, the following answer was given:

The German iron and steel works must follow the American example, and by a greatly enlarged use of machinery reduce the cost of production and protect themselves from future contingencies in the labor market. There is also urgently required for our industry much lower freight rates and the construction of special lines and extra tracks for freight traffic. In this respect, also, America is a model and example for us to follow. The construction of canals, which will offer a cheaper method of transportation, can indeed be of advantage, but can only be considered a palliative, not a remedy.

FRANK H. MASON,
Consul-General.

BERLIN, *November 6, 1899.*

COAL IN GERMANY.*

Australian coal is used by but few gas companies in Germany, owing to its high price, which is \$18 per metric ton of 2,204 pounds. It furnishes two or three times as much gas as the English coal. The English coal is more extensively used, the price varying from 25 to 40 marks (\$5.95 to \$9.52), according to quality. Owing to the scarcity of German coal, its advancing price, and inability to deliver it in short time, the importation of English coal to Germany has largely increased.

Rotterdam is more desirable than Antwerp as a shipping point for coal and merchandise destined for western and southern Germany. The Rhine freight rates on coal from Rotterdam to interior places are 3.50 marks (83.3 cents) per metric ton.

New orders for coke in large amounts can not be filled by the German coke companies, as their output has already been contracted for. English coke has therefore been imported, but it is not as satisfactory as the German product, on account of its breaking up in transit. The syndicate controlling the output of coal and coke in the Ruhr district, which dominates the coal market of Germany, has fixed the prices for contracts for delivery throughout the year 1900 at rates 60 per cent higher than those now current.

I have seen a sample of English anthracite coal, which in hardness, color, and brilliancy closely resembles our Pennsylvania anthracite, but it is less than half the weight of the latter. Our product will therefore have an advantage in the matter of freight rates, occupying for equal weights less than half the space of the English coal. Our coal companies should take advantage of the present favorable opportunity and inaugurate a coal-export movement into Germany, on account of the great demand for the product and the inability of the native collieries to supply it.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *November 14, 1899.*

COAL TRADE IN BELGIUM.

Since 1897, the price of coal throughout Belgium has yearly advanced until the high rates demanded for all kinds and qualities have affected various branches of trade and industry, causing a decided increase in the prices of the necessities of life.

* Extracts from a letter to a New York coal and coke company, to which the original has been sent.

In 1898, the various grades of coal retailed in this city at the following rates per 1,000 kilograms (2,204.6 pounds):

Description.	Price.	
	<i>Francs.</i>	
Grosses houilles (extra-large coal, no dust).....	32.00	\$6.18
Grosses gailletteries (large lumps, 20 per cent dust).....	32.00	6.18
Petites gailletteries (medium-size lumps, 50 per cent dust).....	32.00	6.18
Tout-venant (through and through, 80 per cent dust).....	25.00	4.83

In October, 1899, the same grades of coal retailed at the following prices per 1,000 kilograms:

Description.	Price.	
	<i>Francs.</i>	
Grosses houilles.....	38.00	\$7.33
Grosses gailletteries.....	38.00	7.33
Petites gailletteries.....	38.00	7.33
Tout-venant.....	32.00	6.18
Gaillettins et Têtes de Moineaux (nut coal, sparrow heads).....	40.00	7.72
Gailletteries Maigres (nut stove coal).....	32.00	6.18
Fines grainenses (fine grain).....	25.00	4.83
Briquettes (perforated bricks).....	35.00	6.76
Anthracites, all dimensions.....	35.00	6.76

Announcements sent out by the various coal dealers of Brussels to consumers indicate a further increase in price on or before January 1, 1900.

WHOLESALE PRICE OF COAL.

On October 3, the contract for the different kinds of coal for the Government railways was granted. The contract included one hundred and twenty-five lots of coal, allowing each 5,200 tons; one lot of gaillettins, 1,700 tons; one lot of coke, 600 tons; three lots of 3,800 tons for forges; and three lots of coal of 2,000 tons each for welding furnaces.

The prices bid by coal dealers per ton were as follows:

Description.	Price.	
	<i>Francs.</i>	
Menu gras, type 2.....	17.50	\$3.38
Forge coal.....	18.50	3.57
Coke.....	35.00	6.76
Coal for welding furnaces.....	20.00	3.86
Demi-gras, quart-gras, or uninflamable coal:		
Type 2.....	13.25	2.56
Type 3.....	15.00	2.90
Type 4.....	16.00	3.09
Demi-gras:		
Type 3.....	14.75 to 15.00	\$2.85 to 2.90
Type 4.....	15.00 to 17.00	2.90 to 3.28
Uninflamable coal (type 2).....	13.15 to 13.25	2.54 to 2.55

CARDIFF COAL IN BELGIUM.

At Cardiff, orders for future delivery are abundant, especially for "menu" dust, or fine, coal. The demand for domestic use is increasing.

Coke is very firm, and prices show a tendency to increase.

Prices are reported as follows:

Description.	Price.	
Steam coal:	<i>s. d.</i> <i>s. d.</i>	
Best quality.....	13 6 to 13 9	\$3.28 to \$3.34
Second quality.....	12 9 to 13 0	3.10 to 3.16
Dry coal:		
First quality.....	12 9 to 13 0	3.10 to 3.16
Second quality.....	12 0 to 12 3	2.92 to 2.98
Ordinary:		
First quality.....	7 3 to 7 6	1.76 to 1.82
Second quality.....	7 0 to 7 6	1.70 to 1.83
Monmouthshire (on board Cardiff):		
Best quality.....	12 9 to 13 3	3.10 to 3.22
Second quality.....	11 6 to 11 9	2.80 to 2.88
Best quality for domestic use.....	13 0 to 13 3	3.16 to 3.22
Rhonda gras:		
No. 2.....	10 3 to 10 9	2.49 to 2.61
No. 3.....	13 3 to 13 6	3.22 to 3.29
Brush.....	11 6 to 11 9	2.80 to 2.88
Menu.....	10 0 to 10 6	2.43 to 2.56
"Through and through".....	8 9 to 9 0	2.13 to 2.19
Menu.....	7 6 to 7 9	1.83 to 1.88
Coke for cast (good quality).....	31 6 to 32 0	7.67 to 7.79

The Belgian State railways have just concluded an important contract for coal with Messrs. Morgan, Wakely & Co., of Cardiff. As an example of the insufficiency of the coal supply in this country, it may be mentioned that a representative of the Belgian Government left for England last week commissioned to give orders for coal. As concerns the increase of 3 francs (57.9 cents) per ton agreed upon by the Government railways in the contract of October 3, 1899, the *Revue Industrielle de Charleroi* publishes the following, dated October 8, 1899:

The lots will be delivered in 1900 and paid for at that time. The contracting mines will not profit by the increased price for at least four months. The amount contracted for represents, in round numbers, 450,000 tons, and an increase of 3 francs (57.9 cents) on this tonnage amounts to 1,350,000 francs (\$260,550).

The total production of Belgium is estimated at 22,000,000 tons per annum. The increase, then, only affects about 2½ per cent of this production and represents an average increase of only 6.1 centimes (1.7 cents) per ton for the total extraction; however, it does not mean that the coal market and contemplated contracts will not be influenced by this fact (contract for Government railways).

The contract of October 3, 1899, calls forth several remarks worth noting. First, the number of lots contracted is small. As a rule, the offers were more numerous than the Government demands; but this time the offers were less. The railways wanted 650,000 tons of "menu," and 429,000 tons only were contracted for.

MINING IN HAINAUT AND NAMUR.

In 1898, in the Province of Hainaut, there were sixty-three coal mines in active operation; the selling price at mines was \$2.11 per ton, and the cost of production \$1.93. The production of 1898 exceeded that of 1897 by 438,360 tons, and amounted to 15,861,160 tons.

Ten coal mines were working in the Province of Namur in 1898, and the total production was 573,660 tons, valued at \$1,064,935. The average price at the mine was \$1.85 per ton. Three thousand one hundred and seven workmen were employed in Namur and 89,500 in Hainaut.

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *October 27, 1899.*

BICYCLE TRADE IN ENGLAND.*

The present absence of a good yet cheap English machine makes any comparison with American machines of that class rather doubtful. The American youth buys a wheel for from \$35 to \$50, uses it one or two seasons, and then buys a better one, with intervening improvements, for about the same price. The English lad pays from \$80 to \$100 for substantially the same machine, but he expects—and his family expects—it to last a lifetime. The first-class American wheel of \$100 grade would be worth here about \$120. The highest grade English wheel can now be bought for £18 (\$90); the free wheel and powerful Bowden rear-rim brake attachment, £20 (\$100). Next season, however, the English market will be flooded with a cheap-grade machine costing £10 (\$50). This will be really the first English experiment at making a substantial machine for a popular selling price. The Coventry and Raleigh and Humber samples stand inspection very well, and would grade from \$35 to \$50 on the American market. They are lighter than the usual style English machine, and are not so carefully finished, and the material is not first class; but they sell well. They are practically an imitation of the American wheel designed for quick market purposes.

In true adjustment of parts and careful finish, English high-grade wheels are said to excel the American. Each machine is a special product, turned out with infinite care. No work is rushed wholesale through the shop. To build an ordinary machine to order requires, at the least, ten days, while a really fine machine will not be built for delivery short of three weeks. In each case, the bearings are

* This report was made in answer to inquiries by a New York firm, to which Advance Sheets have been sent.

tested and such careful attention given to details of finish as only a British or German workman can afford to give, for his time does not count for much; yet any American machine, even if it be superior in style, to compete successfully with his product, must approach that perfection of finish. The Raleigh and Humber certainly lead the market here, while they failed to secure a substantial foothold in America; and the makers claim they can not make a machine to sell at American prices. The obvious deduction is that American makers should be able to sell successfully here. The English machine weighs 27 to 30 pounds stripped, and runs up from 29 to 35 pounds with mud guards, brake, lamp, etc. The frame is of solid material, and the parts are cast heavier all over, particularly the hub and fork crown. Durability is thought to be secured, but the result admits of dispute and is at the expense of lightness and style. At the same time, those manufacturers who are figuring upon the English market should consider that the public here has been educated to a heavy wheel and views with suspicion the light machine—and British stubbornness, in this connection, is a very stubborn thing.

That there is an enormous market in provincial England for a substantial-looking and worthy machine of good finish that can be retailed from \$45 to \$55 goes without saying; but the campaign for its successful introduction and sale must be carefully engineered and advertising made judicious and constant, while the peculiar prejudices of the people and English business methods must be consulted at every turn. A competent management in every local field is essential. These are not the conclusions of a bicycle expert, but of an ordinary observer who has given attention to the matter in the hope of being of some service to American manufacturers.

S. C. MCFARLAND,

NOTTINGHAM, *November 1, 1899.*

Consul.

AMERICAN BICYCLES IN SWITZERLAND.*

The progress which American manufacturers of bicycles have made in the past four years in their trade with Switzerland is remarkable. It is not possible to say with any degree of accuracy what number of American bicycles were imported into Switzerland during the period named, as the official statistics can not be relied on, for the reason that all bicycles of American manufacture which were sent to Switzerland from any of the distributing points of either Germany or France were credited as an import from the country

* This report was made in answer to inquiries by a New York firm, which has received Advance Sheets.

from which they last came. Thus, a shipment of American wheels to Switzerland from Hamburg is credited by the custom-house as a German exportation. The official statistics, however, show the direct importation from the United States, and the strides we have made in this Republic during the past four years will be seen by the following table:

Year.	Import.	Value.	Average price.
	<i>Number.</i>		
1895.....	21	\$897	\$42.71
1896.....	140	6,282	44.87
1897.....	1,144	51,753	45.23
1898.....	2,194	92,510	42.16

The year about to end will show a considerable increase over 1898.

The total number of wheels imported into the country during 1898 was 15,027, against 11,067 for the corresponding period of 1897. Of this number, Germany sent 7,531; France, 3,591; England, 773; Belgium, 293; Italy, 286; Austria, 333; and the United States, 2,194, as stated.

The average declared value of each wheel was as follows: German, \$42.70; French, \$42.65; English, \$50.65; Belgian, \$65.30; Italian, \$44.60; Austrian, \$46.15; and the American, \$42.16, as stated.

It will be seen that in point of price, the American wheel stands at the end of the list. In respect to endurance and style, it is admittedly at the head.

I would suggest that a live agent who speaks French and German be sent to canvass the country. He will do more in a short time than catalogues will ever accomplish.

HENRY H. MORGAN,
Consul.

AARAU, *November 8, 1899.*

AMERICAN SHOE EXPORTS.

Consul-General Mason, of Berlin, under date of November 8, 1899, sends the following translation from the Leather Market, of Frankfort (issue of November 4, 1899):

The steadily increasing shoe production of the Middle Western American States, through which the market in that country is to a large degree supplied, compels the shoe manufacturers in New England to look more and more carefully into the conditions of foreign markets where they may find sale for a portion of their product. The American shoe-export trade has in fact grown much more rapidly in

the last five years than it did during the same period just preceding, as is shown by the following table, which exhibits the statistics of American shoe exports during the fiscal years 1889 to 1899, inclusive:

Year.	Pairs.	Value.
1889	518,750	\$585,902
1890	587,108	662,974
1891	551,733	651,343
1892	745,112	914,974
1893	493,027	590,754
1894	647,318	777,354
1895	822,412	1,010,228
1896	1,036,235	1,436,686
1897	1,224,484	1,708,224
1898	1,307,031	1,816,538
1899	1,835,287	2,711,385

Of the exports of 1899, \$525,242 worth went to England, \$504,095 went to the West Indies and Bermuda, and \$409,067 worth went to British Australia. Nearly the half of the entire amount exported came to Europe, whereby it is to be observed that a great portion of the shoes sent to England did not remain there, but were reexported to other countries.

We have often had occasion to comment upon the alertness, the efficiency, and the keen business judgment with which the consuls of the United States aid and support their countrymen in their quest for foreign markets. We know of no country whose consular officers are so active in this direction; especially we Germans, with our legally educated consuls, find ourselves in this respect at an important disadvantage. The American consuls regard it as an honor to serve as pioneers of their country's export trade, and the persistent tenacity with which they follow out their purpose really deserves the highest recognition.

SHOES IN SWEDEN.*

As far as I have been able to learn, no American-made shoes are sold at Gothenburg at the present time. Some time ago, a firm here imported and sold American shoes; but the firm failed, and to my knowledge no one has since taken up the trade. Most of the foreign shoes sold here are of English manufacture, small quantities coming also from France and Germany.

I do not see any reason why a market for American shoes should not be opened in Sweden, if they are well made and prices not too high. The duty is, of course, an obstacle in the way; but this applies to English as well as to American shoes. I have reasons to believe that good American shoes could be sold at least in the three largest cities—Stockholm, Gothenburg, and Malmo. The shoes should not be too heavy; the shapes and sizes most in demand could

* This report has been made at the instance of a New York trade journal, which has received advance proof.

be ascertained through correspondence with shoe dealers here. I think it would be well to send samples with price quotations, so that dealers could compare quality and price with the goods they now handle.

The shoes sold here may be divided into three classes, as follows:

Class 1.—Men's high shoes, price \$4.02 to \$5.90; low shoes, \$3.21 to \$4.82 per pair, retail. The shoes imported belong to this class. The wholesale price of the English (men's) shoes is from 4s. 6d. to 10s. 6d. (\$1.09 to \$2.53) per pair. Ladies' shoes are cheaper.

Class 2.—Men's high shoes, price \$2.68 to \$4.28 per pair; low shoes, 50 cents to \$1 cheaper.

Class 3.—Men's heavy high shoes, retail price, \$1.89 to \$2.68; low shoes, \$1.34 to \$1.89.

These prices are only approximately correct.

STOCK USED.

Class 1.—Veal skin, calfskin, or goatskin, black or yellow. Russia leather is also used for the yellow, or tan-colored, shoes. Patent leather is used, but not much.

Class 2.—For men's shoes, mostly calfskin for the top part of high shoes, and "rossläder"* for the forward and lower part of the uppers. Calfskin is often used for the whole upper, and sometimes common horse leather is used.

Class 3.—Heavy split leather or cowhide, heavy soles. These shoes are probably too cheap and heavy for importation.

IMPORT DUTY.

	Kronor.
Shoes made wholly or in part of silk and not otherwise specified, per kilogram (2.2 pounds).....	9.00 = \$2.412
Shoes made of other cloth than silk, with or without leather soles, per kilogram.....	1.50 = .402
Shoes made of morocco, cordovan, colored, pressed, or lacquered leather.....per kilogram...	6.00 = 1.608
Shoes with soles of wood, also heavy boots.....do.....	.25 = .067
Shoes, other kinds.....do.....	2.00 = .536

Ready-made uppers pay the same duty as finished shoes.

No deduction is allowed for the weight of the covering of the goods, such as paper, paper boxes, or the like.

ROBERT S. S. BERGH,

GOTHENBURG, November 9, 1899.

Consul.

* "Rossläder" is a special kind of horse leather which takes a very high polish. It is obtained by splitting or trimming the horsehide from the hind quarters.

SHOE TRADE IN BELGIUM.*

There are no American-made shoes on sale in this consular district (Ghent), nor can I learn that there ever has been an effort made to introduce them. True, the inducement in the past has not been of such a nature as to warrant much expense in endeavoring to establish a market. Of late years, the conditions are becoming more favorable for the leather-shoe industry, as this shoe is gaining in popularity and is gradually taking the place of the wooden shoe. The wooden shoe is still in general use among the laboring class and farmers, being worn alike by men, women, and children. It is very cheap, a pair costing from 8 to 20 cents. On Sundays and holidays, the greater number wear very cheap shoes, costing from 75 cents to \$1.25 per pair, or slippers made of cloth and of leather costing from 25 to 75 cents. The middle class wear a cheap ready or custom made shoe, running in price from \$2 to \$3.50 per pair. The upper classes wear custom-made shoes, costing from \$4.50 to \$6 per pair. Among this class there is a strong prejudice against ready-made shoes; but this feeling can readily be accounted for, as there are no fine ready-made shoes to be had. There are few boots worn, except by army officers.

A few custom shops turn out a fair-looking shoe, but they all lack the style and finish of the American fine ready-made shoe.

There are no shoe factories located at Ghent; but at Iseghem, in this consular district, there are three establishments, two of them quite extensive. There are also several other large factories in Belgium.

The stocks of ready-made shoes are all of Belgian make, with the exception of that of one house, which carries the goods of a Glasgow firm. These are of a cheap grade, with no shape, very coarse and clumsy. In former years, German and French exporters found a market here, but the home competition has driven them entirely out of the market.

I venture to say that if the American shoe were properly introduced, it would soon gain favor. In order to be successful from the start, the effort should be made cautiously. A competent salesman, familiar with the language of the country, should visit the city to obtain a full knowledge of what is required by the trade. If a display in a large show window could be made, it would materially assist in the introduction and sale of the shoe. It should be borne in mind that this would require a full stock of several varieties and styles.

* This report was made in answer to inquiries by a New York trade journal, the editor of which has received advance proof.

The city of Ghent and suburban towns have a population of 210,000. Duty on boots and shoes is 10 per cent ad valorem.

American leathers—sole, calf, glazed kid, and tan, as well as other varieties—sell quite readily, and are kept in stock by all leather dealers. In both price and quality, they compare favorably with those from other countries, as well as Belgian productions. Shoemakers are well satisfied with American leather. The glazed kid, which formerly was imported exclusively from France, has found a strong competitor in the American product, which is cheaper and equal in quality, and is preferred by many.

The Belgian army uses exclusively a leather from Buenos Ayres, Argentine Republic. It is said the leather is stronger and gives better wear than that of any other country. Great quantities of this leather are consumed. There are no hides exported from this consular district.

RICHARD LE BERT,
Consul.

GHENT, *November 6, 1899.*

ANTWERP IVORY MARKET.

Consul-General Lincoln, of Antwerp, on November 7, 1899, says:

At the fourth quarterly sale held on the 30th and 31st of October, the ivory offered and sold was as follows:

Kongo:	Pounds.
Hard.....	118,574
Soft.....	5,185
Angola.....	27,002
Gaboon.....	9,894
Kameroon.....	5,633
Senegal and Gold Coast.....	1,365
Zanzibar (soft).....	904
Hippopotamus tusks.....	492
Total	169,049

The totals for the corresponding quarter of preceding years were:

	Pounds.
1898	110,230
1897	165,345
1896	132,276
1895	156,527

The bidding was very active, and the prices advanced by from 19.3 to 29 cents per 2.2046 pounds for tusks of all weights, and about 10 cents for the scrivailles and tusks for balls.

These rises in price are more important than those which took place at the last sales in London.

The oversizes remained at the price of the last sales; the tusks for bangles alone diminished in price by about 19.3 cents.

The soft ivory advanced by from 38.6 to 57.9 cents.

The stock on hand amounts to about 225,972 pounds, against 176,368 pounds in 1898, 134,481 pounds in 1897, and 136,685 pounds in 1896.

The next quarterly sale will be held on the 6th of February, 1900.

LUMBER TRADE IN ROTTERDAM.

Having lately received inquiries from American lumbermen as to the status and prices of the lumber market at Rotterdam at this season of the year, I submit the following statement furnished me by one of the principal importers of American lumber at this port.

The demand for American lumber during the month of October has been very lively. Logs have been more quiet.

The following quotations are per 1,000 feet Scribner:

Walnut logs, of fair size, continue in good demand; 18 inches and up to average, 22 to 23 inches, are readily taken off the market at about \$105 to \$115, according to quality. Smaller logs are more difficult to sell.

Of white-oak logs, there are about 70 on hand, and the demand is very limited. The price for prime logs 24 inches and up is \$44 to \$46.

Poplar logs are dull. Seventy logs sold at about \$38; remainder held at \$42 without buyers.

For gum logs there is no demand; stock on hand rather too large.

Hickory logs of prime quality, with small, brown heart, can be placed in small parcels at about \$54.

White-ash logs are in pretty good demand at about \$46 to \$52.

White-oak boards and planks, plain sawed, firsts and seconds, continue in good demand; 8 inches and up to average, 11 to 12 inches by 1 inch, about \$47; 1¼ and 1½ inches, \$49; 1¾ to 2 inches and thicker, \$50 to \$52.

White-oak stair steps, 1¼ to 2¼ by 11, 12, and 13 inches, bring \$52.

White-oak parquet strips, 1 by 3½ to 6, 16, 20, and 24 inches long, \$39 to \$40; 1 by 6 inches, 10 feet and up in lengths, about \$45.

Oak scantling, 3 by 3 inches, 4 by 4 inches, 10 feet and up long, \$39 to \$40.

Whitewood boards and planks, 1½ to 4 inches, \$43 to \$48.

Walnut boards and planks, 1 inch, \$105 to \$107; 1¼ to 2 inches, \$115; 2¼ to 4 inches, \$125.

Gum boards and planks in good demand; 1 to 3 inches, \$42 to \$46.

Cottonwood boards and planks in fair demand; 1 inch, \$28; 1¼ to 2 inches, \$29 to \$31.

White-ash boards and planks, 1 to 3 inches, \$42 to \$45.

On the whole, it can be stated that the demand for American lumber in the Rotterdam market is steadily increasing. The total imports for 1899, I am informed, will far exceed those of last year, and the prospect for next year is very encouraging. Several of the local lumber dealers have lately visited the United States or are now there for the purpose of establishing new trade connections, and I am of the opinion that it might pay some of our larger lumber manufacturers to send a representative to this and perhaps other European ports to work up trade or establish branches or lumber yards of their own.

In this connection, I might call attention to the fact that regular lines of freight steamers are plying between Rotterdam and New York, Philadelphia, Baltimore, Newport News, New Orleans, and other ports in the United States.

S. LISTOE,
Consul.

ROTTERDAM, *November 4, 1899.*

A CORNER IN STAVE BOLTS.

Just now there is an interesting corner in the stave market in this city. Two firms own practically all the stave bolts in Bordeaux, and the price to the coopers has been advanced to 1,050 francs (\$202.65) per grand millier of 1,616 double stave bolts, or 3,232 staves. This is about \$65 a thousand for staves. Each bolt, or "douve," is 1 meter (39.37 inches) long, 3 or 4 inches wide, and $1\frac{1}{4}$ to $1\frac{1}{2}$ inches thick. These are split in twain here with a narrow kerf band saw, making two staves about one-half to five-eighths of an inch thick.

These double bolts must be smoothed and squared "à la façon Autriche," as they say—that is, in the Austrian fashion—and must be thick enough to split with the band saw into two staves from one-half to five-eighths of an inch thick—that is, the half-finished douves should be from $1\frac{1}{4}$ to $1\frac{1}{2}$ inches thick. I judge the smoothing or half finishing, as they call it, is done with some sort of a planer. The double bolts, or douves, are of uniform width and thickness. The importers say they are half finished by hand with a draw shave, but I find no marks of the shave on them. If they are finished by hand, it is probably done with a plane. The corners of all I have seen are slightly rounded, as if a joiner or a spoke shave had been passed along to remove the sharp edges, so as to facilitate handling. I have to use these terms to describe what I see, not being familiar with modern stave making. I know what the "Austrian fashion" is, but can only guess how it is done. The blocks, or douves, are as smooth as if finished with a smoothing plane and joiner. They vary

somewhat in thickness, as much as one-fourth of an inch, I should say; but one can rub his bare hand from end to end with no danger of splinters.

There is no use sending stave bolts here in the rough or in any other form than that described. They must be clear wood. Checks and worm holes will not pass. There is a distinct prejudice against the American stave, because it is harder to work and is said not to last as long in a barrel. There is a small demand for douves of 1.1 meters (43.31 inches), but not much. Just now, the prices are the same for Austrian and American douves to the coopers, but ordinarily the price of American goods is said to be about 150 francs (\$29) per grand millier less than the Austrian.

There is no reliable representative of American staves here at present. The exporter should come himself or send a good and reliable agent and make his own arrangements. The market is a big one—not less than 80,000 tons a year. I think if a man thoroughly familiar with American staves and stave manufacturers were to come here and handle American staves he would have a good business. If he did not succeed, it would be his own fault. At the same time, I am of the opinion that to send American stave bolts here in the rough, assigned to Tom, Dick, and Harry, is, for reasons I do not care to enlarge upon, about equal to pitching them into the sea.

It seems to me that if a man should come here with half-finished staves, planed on both sides, five-eighths to three-fourths of an inch thick, 4 to 6 inches wide, and 1 meter (39.37 inches) long, good selected timber, he would run the Austrian product out of the market. But this is only an opinion, and the opinion of one not an expert in this trade. This would save the coopers the work of splitting and smoothing, and it is the coopers who make the stave trade in Bordeaux. One advantage in half finishing is that the bolts, being uniform, can be packed in convenient bundles and more easily shipped and handled. So far as I am aware, this has never been done.

In order to arrive at a comprehensible estimate of the actual stave trade at Bordeaux (comprehensible I mean to the American dealer), I had weighed twenty average American douves and an equal number of Austrian. The former weighed 86 and the latter 66 kilograms (189.6 and 145.5 pounds), confirming very closely my judgment that the American wood is one-fourth heavier than the Austrian. On the basis of 80,000 tons a year—of which all but 2,000 tons are Austrian—this would give about 40,000,000 staves imported here each year. It is evidently a market worth looking after. But merely sending a maker's cards to a dealer is not "working a market."

ALBION W. TOURGÉE,

BORDEAUX, *November 27, 1899.*

Consul.

BREMEN AS A COTTON MARKET.

The following interesting information is taken from the report of the Bremen Cotton Exchange for the week ended November 4, 1899:

Receipts and sales.	North American.	East Indian.	Various	Total.
Received:	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
This week.....	68,476	.....	500	68,976
1899.....	1,045,635	11,250	2,993	1,059,878
1898.....	1,207,686	6,209	302	1,214,197
Disposed of:				
This week.....	24,256	.....	.....	24,256
1899.....	1,199,995	10,305	2,632	1,212,932
1898.....	1,355,629	7,222	625	1,363,476
Supply on hand:				
January 1, 1899.....	308,625	193	187	309,005
To-day	154,265	1,138	548	155,951
November 4, 1898.....	113,440	624	257	114,321

The sources of this week's importations were as follows:

	Bales.
Savannah.....	30,304
Wilmington, N. C.....	17,657
Galveston.....	10,483
Charleston.....	8,501
New York.....	1,148
Baltimore.....	38
Bahia.....	500
Hamburg.....	345

Prices were:

Description.	Upland.		Upland, tinged.		Upland, high colored.		Upland, stained.	
	<i>Pfennigs.</i>	<i>Cents.</i>	<i>Pfennigs.</i>	<i>Cents.</i>	<i>Pfennigs.</i>	<i>Cents.</i>	<i>Pfennigs.</i>	<i>Cents.</i>
Middling fair.....	42½	10	.....	.....	.....	.....	.....	.....
Fully good middling.....	41	9.7	.....	.....	.....	.....	.....	.....
Good middling.....	40½	9.6	.....	.....	.....	.....	.....	.....
Middling.....	39¾	9.3	38½	9.2	38¼	9.1	37½	8.9
Low middling.....	37¾	8.9	.....	.....	.....	.....	.....	.....
Good ordinary.....	35¾	8.4	.....	.....	.....	.....	.....	.....
Ordinary.....	33¾	7.9	.....	.....	.....	.....	.....	.....

Description.	Extra superfine.		Fine.		Fully good.		Good.	
	<i>Pfennigs.</i>	<i>Cents.</i>	<i>Pfennigs.</i>	<i>Cents.</i>	<i>Pfennigs.</i>	<i>Cents.</i>	<i>Pfennigs.</i>	<i>Cents.</i>
M. ginned Broach.....	.....	.....	39	9.3	37¾	8.9	36	8.6
Oomrawuttee No. 2.....	.....	.....	34½	8.2	33	7.9	31¾	7.6
Khandelsh ginned.....	.....	.....	.....	.....	32¾	7.8	31¾	7.5
Blatee.....	.....	.....	34	8.1	32½	7.7	31¾	7.4
Bhownggar.....	.....	.....	35	8.33	33¾	8	32¾	7.7
Bengal.....	34¾	8.3	33¾	8.03	32¾	7.7	31	7.4
M. ginned.....	35	8.33	34	8.1	32½	7.73	31¾	7.4
M. ginned Seinde.....	34¾	8.3	33¾	8.03	32¾	7.7	31	7.4

On November 4, there were being loaded for Bremen at Savannah five steamships; at New York, two; at Galveston, one; at Charleston, one; at Baltimore, one.

On November 4, twenty-six steamships were en route to Bremen from American ports loaded with over 120,000 bales of cotton.

GEORGE H. MURPHY,
Vice-Consul.

BREMEN, *November 7, 1899.*

SKIN WOOL IN GERMANY.

The German Credit Institute of Saxony has formed a joint-stock company having for its object the production of skin wool, which has hitherto been produced almost exclusively in the south of France and northern Italy. Glovers' wool has been produced here only in limited quantities. The textile industries were compelled to cover their requirements in this line from abroad—*i. e.*, from France and Italy.

This term does not refer to a new sort of wool, but applies to the raw products of animal wools hitherto known as "Raufwolle" (scraped wool) or "Gerberwolle" (glovers' wool). Under "wool" is collectively understood the hairy covering of the various breeds of sheep, from which such wool is shorn during life. But, as one can hardly shear them down to absolute nakedness, a certain amount of wool, or hair, is left as a covering after shearing. The product so obtained is known as "glovers' wool." Now, the wool of slaughtered animals is mostly of inferior quality and, moreover, materially shorter than that obtained by shearing the living animals, for which reason the former is used for making up inferior textiles, such as low-class flannels, etc. Skin wool is wool which is scraped off of the skins of dead sheep. The wool obtained in this manner is, as a rule, longer, stouter, more healthy and uniform than that obtained by shearing, because sheepskins are mostly obtained from animals slaughtered for food, which must necessarily be sound, large, and healthy, whereas shorn wool is obtained, as well, from sickly, decrepit animals—such as are found in every flock. Skin wool is, consequently, likely to be more uniform in respect to fineness of quality; because, in scraping the wool off the skin, the coarser portions which grow on certain parts of the body can be sorted more carefully than is the case with shorn fleece.

Skin wool and glovers' wool are thoroughly different in character. The latter is principally removed from the skin by chemical means, and, in consequence, has not the same value as the shorn wool for

the wool industries, more especially where it is a question of producing sensitive colors. Skin wool, on the other hand, is obtained without using chemicals and is fully equal to shorn wool in respect to quality, and, indeed, for certain purposes—*i. e.*, as abb wool (warp)—it is often preferred to shorn wool, owing to its tenacity and length. It is hardly necessary to specially mention that where skin wool is desired, the main thing is to allow the fleece to have had a growth of from eight to twelve months. As to the process of producing such skin wool and its commercial value, nothing whatever has been made public up to this time.

GEO. SAWTER,

GLAUCHAU, *November 25, 1899.*

Consul.

GERMAN CLOTHING-EXPORT TRADE.

At a convention of the ladies' and children's cloak manufacturers at Berlin, which convened on the 14th of November, the commercial counselor, Mr. Mannheimer, one of the largest wholesale clothing manufacturers of Germany, delivered an expert opinion on the clothing trade, this subject having been assigned him for report. He said:

The clothing industry of Berlin has, since 1865, assumed immense proportions as a factor of the German export trade. Its dominating position in the world market is universally recognized. This industry is the pioneer and main feeder for varied branches of the textile industry, such as woollen and wool-mixed stuffs, silk goods, linings of all kinds, laces, braids, worsted and braided trimmings, buttons, embroideries, and numerous other lines of manufacture.

* * * * *

But it is a deplorable fact that while the present boom has so favorably affected nearly all other industries of our country, the clothing-export trade has not only not increased, but has suffered a diminution during the last three years. Germany's exports of textiles and ready-made clothing in 1896 were 957,000,000 marks (\$227,766,000); in 1898, 889,000,000 marks (\$211,542,000); decrease in value of exports, 68,000,000 marks (\$16,184,000). But this decline is by far greater when compared with the figures of the year 1889, when exports in this line were to the value of 1,084,000,000 marks (\$257,992,000). If we take the special line of ready-made clothing alone, we find the exports were, for 1896, 94,400,000 marks (\$22,469,200) in value; 1897, 88,300,000 marks (\$21,015,400); 1898, 65,300,000 marks (\$15,541,400). The year 1898, as compared with 1896, shows a shrinkage of 29,000,000 marks (\$6,925,800) in this single line. Taking the exports of clothing by countries, the shrinkage amounts in the exports of clothing: to England, 14,300,000 marks (\$3,403,400); Holland, 4,100,000 marks (\$975,800); Switzerland, 3,300,000 marks (\$785,400); United States, 2,200,000 marks (\$523,600); Canada, 900,000 marks (\$214,200); Belgium, 500,000 marks (\$119,000).

This retrograde movement is alarming. The explanation lies in the exorbitant customs tariffs of foreign countries. In the United States, the import duties on

clothing amount to 70 to 80 per cent of their value; in Russia, 40 to 50 per cent; in Spain, 25 to 30 per cent; in Italy, 25 per cent; in Canada, 25 per cent more is asked than on clothing imported from England; in many other countries similar tariff rates exist.

In consequence of this, many thousands of operatives who were fully employed a few years ago have their existence endangered, and employers are in a critical position. It is self evident that our clothing and textile manufacturing classes are not satisfied with a continuation of the present trade treaties with foreign nations. What we need above all things is a change by which the almost prohibitive tariff rates of these countries should be reduced by at least one-half. Most important for our line is a rectification of our trade relations with the United States. Little concessions here are of no value; the present United States duties on textiles and clothing must be lowered if we are to become enabled to continue our exports.

It is strange that our manufacturers in the clothing and cloak trade have not as yet made efforts to gain foreign markets for their productions. They are in this respect far behind other branches of manufacture. Our clothing trade, if energetically managed, could soon show as good results as our cotton textiles, iron and steel, machinery, office furniture, etc.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *November 18, 1899.*

AUTOMOBILES AND ELECTRIC-POWER PLANTS IN SWEDEN.

Many business men here think that the import of motor carriages into Sweden, if once properly started, will be considerable, provided they can be made durable, neat in appearance, safe and easy to handle, and not too expensive. Cab owners, especially in Stockholm, are considering the advisability of purchasing motor carriages, and a short time ago they sent experts to Berlin, to study and examine motor cabs manufactured in Germany. The report they made on their return was not altogether favorable. They said that automobiles which in catalogues seemed to be ideals of perfection in reality did not come up to expectations.

The chief objection to the motor cabs, with accumulators or storage batteries, was that they could not make sharp enough turns. The cabs were built with the batteries placed close to the back wheels. The steering power of the front wheels was so small that the carriages could turn only in very large curves, making them unfit for use on narrow streets. Another inconvenience was that as soon as the cabs got on a road covered with a layer of sand an inch thick, they stopped helplessly.

Besides these inconveniences, common to French and German motor cabs alike, it was said that few of the carriages exhibited were of the type desired—that is, with room for from two to four passengers. Hunting wagons, motor cycles, delivery wagons, etc., for sportsmen and business houses were plentiful; but cabs were fewer and, as a rule, clumsy in appearance. A German manufacturer promised, however, to remedy the faults mentioned; but it is not yet generally known whether the prospective purchasers and the manufacturer can agree on terms. Manufacturers of motor carriages usually demand one-fourth of the price for thirty days' trial; while the cab owners in question desire free trial before purchase, because they are unwilling to buy such expensive machines without being sure that they are practically useful.

At present, there is only a petroleum-motor carriage and a light motor cycle in Gothenburg, both of French manufacture. I believe there is an American motor carriage in Stockholm; but American manufacturers ought to pay attention, also, to the markets in the other cities of this Kingdom, especially Gothenburg and Malmö. It would be of great advantage for American firms to be represented here at once.

Another thing of importance is electrical machinery in general, which will be in great demand as soon as the people have fully learned the value of their numerous waterfalls. A large electric-power plant will soon be built at Trollhättan; electric railways and tramways are being planned for Gothenburg, Lund, Bjerröd, and Jönköping. In this line, as in everything else, the Germans are always watchful; they pay close attention to details, and, if necessary, send experts here to study plans, etc., whereby they greatly increase their chances to introduce machinery. If it is not practical for Americans to do likewise, they could possibly employ active agents to represent them here.

Electric-motor carriages are preferred for city traffic. Those with benzine motors are said to be noisy and to emit offensive gases.

ROBERT S. S. BERGH,

Gothenburg, November 23, 1899.

Consul.

FRENCH WINE CROP.

The reports thus far received from the wine-producing districts of France, Algeria, and Tunis promise a yield of about 48,000,000 hectoliters (1,268,016,000 gallons) in 1899. The organs of the wine growers differ slightly in this estimate. Early frosts reduced the production in some districts, as in the Drôme, where it was 150,000 hectoliters (3,962,000 gallons) in 1898 and 134,000 hectoliters (3,500,000 gallons) in 1899. The Department of the Rhone, in which Lyons is situated, produced 800,000 hectoliters (21,133,600 gallons), two-thirds of which is known as Beaujolais. In the Gironde, the Department in which Bordeaux is situated, the yield is 2,926,787 hectoliters (77,315,000 gallons), against 2,355,645 hectoliters (62,239,000 gallons) for 1898. In the Hérault, where a very good quality of ordinary wine is grown, the yield this year is 9,655,401 hectoliters (255,066,728 gallons), against 6,745,000 hectoliters (178,182,665 gallons) in 1898. The Department of the Eastern Pyrénées yields 2,178,733 hectoliters (57,555,590 gallons), against 1,000,370 hectoliters (26,427,000 gallons) in 1898.

One of the newspaper organs of the wine interests estimates that the surplus production of 1899 over 1898 will be absorbed in the following manner:

(1) In home consumption, which is shown by the taxes levied at the city gates upon wines entering the different cities of France to be steadily increasing. The increase for the first half of 1899 was 538,470 hectoliters (14,234,762 gallons). It is believed to be a moderate estimate that the domestic consumption for 1899 in the cities of France will be 1,100,000 hectoliters (29,058,700 gallons) in excess of that of 1898.

(2) There will be a larger consumption in the country than in years of small harvest.

(3) An increased distillation for brandy. It is estimated that not less than 1,400,000 hectoliters (36,984,000 gallons) will go into brandy of 100° proof. The average brandy product of the last nine years was 77,000 hectoliters (2,045,109 gallons). The product this year is expected to reach 100,000 hectoliters (2,641,700 gallons). The steady increase in the annual production of wine will compel producers to devote a larger percentage of their output to brandy, as they did thirty and forty years ago, before the invasion of the phylloxera and the mildew.

The agriculturists of France are devoting more of their land to wine growing at present than at any time during the past forty years.

Stock raising and grape growing are considered the two most profitable pursuits for the farmer. I passed a few days last summer in the Valley of the Rhone in the neighborhood of Valence and St. Péray, where all the rich Hermitage wine is grown, and was taken through thousands of acres that had been newly planted with vines and shown stretches of mountain and hill side which will all be under cultivation in another year. On the steep mountain sides, where only the most stunted vegetation seems possible rich vines are growing. The soft stone is first blasted, and, after receiving the rains of two seasons, the vine is planted and produces a highly prized quality of white wine and the famous Hermitage brands. *Half a mile distant, in the Valley of the Rhone, the vine grows almost spontaneously, but does not produce the same fine wine. A dozen different varieties of wines are produced on the hillsides within an area of 2 miles, the qualities depending upon the nature of the ground and the exposure to the sun.

While the production and the consumption of wine in France are steadily increasing, the exportation is diminishing. The quantity exported in 1887 was 2,481,918 hectoliters (65,566,000 gallons). In 1897, ten years later, it had fallen to 1,774,862 hectoliters (46,890,000 gallons). Wine growers were compensated for this shortage by an increase in prices, the money value of the exports of 1887 being 233,727,000 francs (\$45,109,311); for 1897 it was 238,508,000 francs (\$46,032,000). These figures come from the customs officials, who, during the later years of the decade, placed a higher valuation upon the sparkling wines, which represented three-quarters of the total exports.

A notable change has also occurred in the direction taken by exports. In 1887, they were almost equally divided between European nations and the countries over the seas. In 1897, three-fourths of the exports were absorbed in Europe, where the number of the consumers increased, and the domestic product remained almost stationary. The principal decline was in Africa and the countries of South America, especially in the latter, where the wine exports were 57,000,000 francs (\$11,001,000) in 1887, and only 17,000,000 francs (\$3,281,000) in 1898.

At a meeting of the National Agricultural Society, reported in the Journal Officiel of September 20, 1899, it was set forth as a fundamental principle, never to be lost sight of by French wine growers, that their success must in the future depend entirely upon grafting. This principle is also applicable to the wine growers of Spain, Italy, and perhaps some other countries.

As nearly as I can learn, it was about 1870 when a Bordeaux wine grower planted in his high-grade vineyard a number of California vines. They took readily to the French soil, sending forth tall and

stout branches, rich in fruitage. But in proportion as they advanced, his own vines, which had produced a very choice brand of wine, began to wither and die. An examination demonstrated that they were attacked and destroyed by an infinitesimal insect that multiplied with astonishing rapidity. From year to year it spread, until but few vineyards in France were free from its ravages. It cost France more money than the Franco-Prussian war. Its devastation continues. In the meantime, the American vines flourish and produce in abundance where the others die. Upon examination, it was found that the same tiny parasite feasted upon the American vines without injuring them, the small cicatrice that it leaves being filled with sap and closed as soon as made.

The vice-president of the Agricultural Society of the Drôme, Mr. Auguste Tezier, tells me that before this insect invaded France, the annual production of wine was 60,000,000 hectoliters (1,585,020,000 gallons) on a land surface of 2,500,000 hectares (6,177,500 acres). To-day, the surface planted is about 1,660,000 hectares (4,102,000 acres). Every year, the area planted in vines increases from 10,000 to 12,000 hectares (about 30,000 acres). It is expected in a few years that the production of the period preceding the phylloxera will be equaled. In fact, professors of viniculture expect that France will in a few years produce more wine than at any previous time, the methods of cultivation and of vinification having been so perfected as to give to the soil and to the grape the maximum of production. Hilly, gravelly, stony land, heretofore absolutely unproductive, is to-day bearing vines, and hundreds of acres are being annually brought under cultivation.

No vine can be looked upon as worth cultivation until it is grafted with the American vine, as it is then proof against phylloxera. M. Tezier says the insect always remains where it has once taken up its home, and no one expects it ever to leave France. There will therefore always be a demand for American grafts for France, Algeria, Tunis, Spain, and all other wine-producing countries.

The phylloxera destroyed 170,985 hectares of vineyards in Spain last year. Fifty thousand five hundred and eighty-one hectares (124,986 acres) have already been replanted or grafted with American vines. Spain formerly produced from 17,000,000 to 24,000,000 hectoliters (449,089,000 to 634,000,000 gallons) of wine. All the vines of that country, like those of France, must be Americanized.

At the meeting of the National Agricultural Society above referred to, it was said:

It is more fully recognized than ever that for the rebuilding of vines, recourse must be had to grafts that are the most powerfully resistant to phylloxera; that is to say, to pure American, or to Americain-Americain (double American). But certain hybrid Franco-American vines must not always be rejected, as there are

special conditions in which they may be used to advantage. The value of the *riparia-rupestris* as grafts must, however, be insisted upon, above all, as regards abundant fruitage in hard, dry ground.

Between 1888 and 1898 there was an increase, as shown at the meeting of the National Agricultural Society, November 21, 1898, of 50,000,000 hectoliters (141,900,000 bushels) in the wheat yield of France. It is believed that this amount is likely to gradually diminish, on account of the increased attention given to grape growing, since a means has been found of nullifying the influence of the phylloxera.

In this connection, I will add that M. Couanon, the inspector-general of viticulture, recently stated at a meeting of the Academy of Sciences that if roots of vines were placed for five minutes in a bath heated to 53°, the eggs, or larvæ, of the phylloxera would be destroyed.

JOHN C. COVERT,

LYONS, November 28, 1899.

Consul.

ESTIMATE OF THE YEAR'S SUGAR CROP.

During the month of October, manufacturers and dealers in sugar all the world over have been anxiously scanning the various reports of this year's beet-sugar crop, in order to form some idea of the future markets in sugar. As three-fourths of the world's supply of sugar is made from the sugar beet, the interest in the results of the product in Europe is widespread. Of course, at the present time, all statements can be only approximate. In the following, I shall give the figures of such as are considered the best authorities in Europe, and will only add that perhaps the safest of all are those collated by the International Union for Statistics on Sugar. At any rate, they are the most conservative.

Country.	1899-1900.				1898-99 (actual crop).
	International Union.	Licht.	Giesecker.	Centralblatt.	
	<i>Metric tons.*</i>	<i>Metric tons.*</i>	<i>Metric tons.*</i>	<i>Metric tons.*</i>	<i>Metric tons.*</i>
Germany.....	1,717,069	1,800,000	1,830,000	1,900,000	1,721,710
Austria.....	1,044,500	1,070,000	1,015,000	1,100,000	1,051,200
France.....	836,494	915,000	910,000	930,000	830,132
Russia.....	851,630	870,000	880,000	900,000	790,000
Belgium.....	242,000	250,000	230,000	230,000	235,000
Holland.....	158,000	175,000	170,000	160,000	149,760
Other countries.....	84,000	220,000	215,000	225,000	170,000

*Of 2,204.6 pounds.

To dwell more particularly on the results of the labors of the International Union for Statistics on Sugar, the following table will

show what facts and figures they gathered by sending inquiries to each and every factory:

Country.	Factories.		In all factories operating.			
			Beets worked.		Sugar produced.	
	Report- ing.	Operat- ing.	1899-1900 (estimated).	1898-99 (actual crop).	1899-1900 (estimated).	1898-99 (actual pro- duction).
			<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Germany	389	399	12,776,990	12,144,291	1,717,069	1,717,973
Austria	200	213	8,176,000	7,611,000	1,044,500	1,041,700
France	246	342	7,095,512	6,105,614	836,494	781,975
Belgium	88	109	1,842,000	1,496,000	242,000	209,000
Holland	24	31	1,230,000	1,122,522	158,000	149,700
Russia	269	269	7,336,400	6,005,636	851,630	755,115
Sweden	16	16	690,000	481,000	84,000	59,700
Java					766,000	725,030

From the foregoing it will be seen that this year's crop of sugar in Germany, Austria, France, Russia, Belgium, Holland, and other countries is larger than that of last year. The approximate increase of sugar looked for in Europe will be about 250,000 to 350,000 metric tons.

As to Germany, there had been 1,057,938 acres of land seeded to beets, which was only 3,706 acres more than last year. The season having been a favorable one, this year's crop turned out to be much heavier than last year's. In the year 1898-99, the average tonnage per acre was 11.27 metric tons. However, the yield of sugar from the beets does not seem to be as promising as it was last year. The average yield of sugar last year was 13.36 per cent, while it is expected that it will not go beyond 12.7 per cent this year. Hence, the production of sugar will not likely amount to more than last year's figures.

In this connection, it will be interesting to glance at the following tables, one column showing the yield of beets per acre in Europe and the other showing the sugar contents in the beet:

Country.	1898-99.		1899-1900.	
	Beets per acre.	Sugar in the beet.	Beets per acre.	Sugar in the beet.
	<i>Metric tons.</i>	<i>Per cent.</i>	<i>Metric tons.</i>	<i>Per cent.</i>
Germany	11.26	13.36	11.9	12.7
Austria	9.7	13.69	10.07	12.77
France	10.08	12.71	10.95	11.76
Belgium	11.11	13.97	12.53	13.13
Holland	9.92	13.38	10.39	12.84
Russia	5.32	12.57	5.71	11.6
Sweden	8.34	12.41	10.32	12.17

It will be observed that in all the seven countries mentioned above, the same results, generally speaking, have been obtained; the yield per acre of beets has been larger than that of last year, but the contents of sugar in the beet has been less, and the decrease in the latter quality has been greatest in France.

To be better able to compare this year's crop of beet sugar with former years, the following table will show the annual production since 1895-96:

Country.	1899-1900.	1898-99.	1897-98.	1896-97.	1895-96.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Germany.....	1,800,000	1,721,718	1,852,857	1,836,536	1,615,111
Austria.....	1,070,000	1,051,290	831,667	934,007	791,405
France.....	915,000	830,132	821,235	752,081	667,853
Russia.....	870,000	790,000	738,715	728,667	712,096
Belgium.....	250,000	235,000	265,397	288,009	235,795
Holland.....	175,000	149,763	125,658	174,206	106,829
Other countries.....	220,000	170,000	196,245	202,990	156,340
Total.....	5,300,000	4,947,903	4,831,774	4,916,856	4,285,429

In conclusion, I append the estimate made by the well-known expert in sugar statistics, Mr. Licht, of Magdeburg, of the new cane-sugar crop for 1899-1900:

Country.	1899-1900.	1898-99.
	<i>Metric tons.</i>	<i>Metric tons.</i>
Cuba.....	300,000	315,175
Puerto Rico.....	50,000	55,295
Trinidad.....	50,000	48,757
Barbados.....	50,000	50,872
Martinique.....	30,000	30,411
Guadeloupe.....	36,000	39,254
Demerara.....	85,000	92,940
Brazil.....	180,000	145,000
Java.....	650,000	888,605
Philippine Islands.....	125,000	124,456
Mauritius.....	150,000	180,062
Réunion.....	39,000	39,485
Jamaica.....	30,000	30,000
Minor Antilles.....	85,000	80,000
United States.....	370,000	275,000
Peru.....	130,000	125,000
Egypt.....	90,000	90,822
Sandwich Islands.....	250,000	240,000
Total.....	2,700,000	2,851,134

Though all the above estimates are merely approximate, and will have to be modified and changed from time to time, they show one thing pretty conclusively, and that is that there will be sugar amply sufficient for another year to come. The crop of 1899-1900, both of beet-root and cane sugar, will again amount to about 8,000,000 tons.

And this is about the quantity required annually to sweeten human existence all over this globe, with a yearly increase of consumption amounting to about 250,000 tons. Of this amount, our country at present uses about one-fourth, or 2,000,000 tons, which shows that Americans are by far the greatest consumers of sugar.

HENRY W. DIEDERICH,

MAGDEBURG, *November 1, 1899.*

Consul.

NECESSITY FOR BEST SEED IN SUGAR-BEET CULTIVATION.

About a year ago* I called the attention of the American sugar-beet growers to the importance of planting the best seed obtainable, no matter what the price might be. Since then I have learned, from time to time, of beet seed shipped to the United States which the beet growers of Germany and France, who are in the lead in this industry, would not touch. Time and again I see advertisements in Magdeburg and other papers calling for such seed, and I am told that in this way large quantities of second and third class qualities are concentrated at Hamburg and other seaports and shipped to foreign countries at a cheap price. As our beet-sugar industry at home is yet in its infancy, it is all important that as few mistakes should be made as possible. By taking advantage of the experience of other countries, we shall save time and money.

The sixth annual report on the experiments made with different kinds of sugar-beet seed at the experiment station at Tabor, Bohemia, in 1898, shows that forty-nine different kinds of German, French, and Austrian seeds were tested, with the following results:

Name of seed.	Sugar in the beet.	Beets per acre.	Sugar per acre.
	<i>Per cent.</i>	<i>Tons.</i>	<i>Tons.</i>
Knauer Mangold.....	13.72	16.87	2.06
Knauer Improved White Imperial.....	15.1	16.97	2.29
Knauer Improved Klein Wanzlebener.....	14.14	18.13	2.32
Knauer Electoral.....	14.58	18.44	2.43
Koserak's.....	15.83	14.51	2.09
Sugar Factory Kwassitz Elite.....	14.7	17.8	2.28
Blendorfer I.....	15.68	15.65	2.23
Blendorfer II.....	15.72	16.01	2.32
Zirku's Klein Wanzlebener.....	15.43	16.21	2.34
Sugar Factory Sadova Klecauer Elite.....	15.02	15.75	2.17
Udozal's Klein Wanzlebener.....	15.41	15.99	2.28
Vilmorin blanche améliorée (grown in France).....	15.49	13.23	1.91
Blacholitzer Klein Wanzlebener Elite.....	14.65	16.47	2.15
Improved Blacholitzer Kronen Elite.....	16.34	14.6	2.23

* See CONSULAR REPORTS No. 218 (November, 1898), p. 451.

Name of seed.	Sugar in the beet.	Beets per acre.	Sugar per acre.
	<i>Per cent.</i>	<i>Tons.</i>	<i>Tons.</i>
Nebesky's Klein Wanzlebener.....	14.68	14.95	2.02
Schreiber's Special Elite.....	17.35	13.91	2.2
Schreiber's Klein Wanzlebener Elite.....	17.25	13.74	2.22
Eggeling's Garterslebener.....	16.36	14.95	2.35
Dippe's Wanzlebener Improved Klein White Elite.....	16.69	14.04	2.24
Dippe's Wanzlebener Improved Klein White Elite (Vilmorin).....	16.32	13.78	2.14
Klein Wanzlebener Original.....	17.16	13.9	2.26
Strandes' Zehring, Improved Klein Wanzlebener.....	16.16	14.72	2.16
Schobbert's Excelsior.....	15.78	15.83	2.25
Vilmorin blanche améliorée (Russian growth).....	15.61	13.74	2.02
Wesche's Zuckerreichste.....	15.96	14	2.13
Wesche's Ertragreichste.....	15.89	15.83	2.39
Sachs' Elite Vilmorin.....	15.07	14.53	2.4
Sachs' Improved White Klein Wanzlebener.....	15	15.89	2.37
Grasshoff's Improved Klein Wanzlebener.....	15.36	15.01	2.14
Knoche's Improved Elite.....	16.48	13.74	2.07
Knoche's Improved Klein Wanzlebener Elite.....	17.04	13.46	2.11
Ziemann's Quedlinburger A.....	16.27	13.65	2.05
Ziemann's Quedlinburger Elite.....	16.26	14.25	2.18
Kabrhel's Draskowitz Klein Wanzlebener A.....	15.29	17.72	2.48
Kabrhel's Draskowitz Klein Wanzlebener B.....	15.15	16.22	2.26
Kabrhel's Draskowitz Klein Wanzlebener.....	13.82	16.48	2.03
Deutsch's B. G. V.....	15.08	15.93	2.12
Deutsch's B. A.....	14.62	17.89	2.49
Sugar Factory Nymburg seed.....	14.63	17.22	2.26
Mette's Quedlinburg.....	14.25	17.73	2.3
Mendl's Brezau.....	15.2	17.71	2.41
Jaentsch's Vitria.....	15.21	14.11	2.17
Mette's Quedlinburger Klein Wanzlebener Elite.....	14.62	18.05	2.39
Mette's Quedlinburger Klein Wanzlebener Elite, second.....	14.52	17.38	2.32
Baumeier's Klein Wanzlebener.....	14.9	18.02	2.47
Vilmorin's Russian growth.....	14.89	15	1.1
Knoche's Walwitzer Improved Elite.....	15.18	16.18	2.24
Knoche's Walwitzer Klein Wanzlebener Elite.....	14.68	17.36	2.29
Deutsch's A. B.....	14.07	17.02	2.11

It will be seen from the foregoing that by far the best results came from the first-class German seed furnished by the old and reliable firms of Schreiber, Klein Wanzleben, Dippe, and others. For sugar contents in the beet, these seeds were superior to all others. The French seeds did not equal them either in sugar contents, tonnage, or yield per acre. France herself imports foreign beet seeds in large quantities. In the year 1898, not less than 3,435 tons were bought by that country, for which \$629,680 were paid; and of this amount 3,326 tons were furnished by Germany. In order to supply her acreage for sugar beets, comprising about 250,000 hectares (617,750 acres), France requires about 7,000 to 7,500 tons of seed. Hence, about one-half of the sugar beets raised in France are grown from German seed.

It will be noticed that the percentage of sugar in the beet from German seed varies greatly.

The difference in price between the varieties will scarcely exceed

1 cent per pound, yet the difference in the crop obtained from, say, Schreiber's seed and from Mette's or Baumeier's will be very great. The samples tested at the experiment station in Bohemia showed a difference of $2\frac{1}{2}$ per cent of sugar in the beet. But suppose the difference averages only 2 per cent, what will be the result? A factory that will, in the course of a campaign, slice 50,000 tons of beets raised from the higher grade of seed will produce 1,000 tons more of raw sugar, which, at the rate of \$50 a ton, will net the stockholders \$50,000 more money than if the same quantity of beets grown from a lower grade of seed had been used. I therefore repeat what I said in my former report on this subject:

Like so many other things in life, the cheapest beet seed is the dearest. It pays to get the very best, and only the very best is good enough.

I wish to emphasize this point once more by another illustration. I have in mind two American farmers, who are neighbors, both of whom have earnestly gone into sugar-beet raising. Farmer A believes, as I do, that only the very best is good enough for him, and is determined to have the best. So he makes sure that he gets first-class German seed, such as Rabbethge & Giesecke, Licht, Dippe, Schreiber, and other first-class firms furnish. He uses 20 to 22 pounds of this to the acre, hence for 5 acres he needs one sack, containing 1 cwt., of German seed. One sack of such seed delivered at his farm will cost him from \$10 to \$11. Five acres, thus seeded, are supposed to produce 60 tons of beets.

Farmer B is of a different turn of mind. He believes in buying "cheap" and making money fast, and therefore he buys beet seed that sells at 6 to 7 cents a pound. He also uses one sack of seed for 5 acres of land, and is sure that he has saved \$3. His beets come up wonderfully, and his beet fields thrive as well as those of his neighbor. When harvest time comes, he also garners in about 60 tons of beets from each 5-acre field, as does his neighbor, Farmer A, which confirms Farmer B in his view that his course in getting cheap seed was wise and profitable. But when he hauls his beets to the factory, where they are graded and paid for according to the sugar found in the juice by polarization, he discovers to his dismay that beets grown from second or third class seed will surely polarize 1, 2, 3, or more per cent less than will those produced from first-class beet seed.

The average price paid to the farmer for beets delivered to the factory is \$4 per ton and 25 cents extra for each additional per cent of sugar found over 12 per cent. Now, let us suppose that Farmer A's beets will polarize only 2 per cent more than Farmer B's, which is not at all an unlikely supposition. This would put 50 cents more

per ton into Farmer A's pocket than Farmer B gets. In other words, Farmer B invested the same amount of money in his 5 acres of land; his beet field required the same amount of fertilizers and the same amount of labor from the beginning to the end of the season. He saved \$3 on every sack of seed, but when he delivered his beets at the factory and received his money for his crop, which polarized 2 per cent less than did that of his neighbor, who had bought higher priced seed, he found that his 5 acres brought him \$30 less than Farmer A received.

In conclusion, I have to observe that the demand for first-class seed has increased, because the beet-sugar industry is to be largely extended in the coming season, particularly in Russia. Hence it is expected that there will be a shortage in the supply.

HENRY W. DIEDERICH,

MAGDEBURG, *November 9, 1899.*

Consul.

THE GERMAN SUGAR MARKETS.

The last sugar conference at Brussels having passed off without bringing about any result, the proposition was made in Germany, from a private quarter, to effect the abolition of the sugar bounty by the division, in a fixed proportion, of the various sugar-consuming countries among the sugar-producing states. This proposition, the execution of which is scarcely to be thought of seriously, is based upon the consideration that the bounty is a consequence of international competition, and that consequently the only means of entirely doing away with the bounty is to do away with the competition. The execution of the project would naturally mean a radical interference with international economy, and it may well be assumed that the various producing states interested in this question will not agree to such an arrangement. It is true that the unbridled liberty of commerce in the markets of the world, and the competition caused thereby, has preeminently contributed to bring about and extend the sugar bounties; but even supposing the competition between the European beet-sugar states could be abolished by means of an international agreement, like the one proposed, there would yet remain the great struggle between beet sugar and cane sugar. The losses sustained by the German sugar industry in the last fifteen years must be attributed in part, at least, to the competition of cane sugar.

Germany has, from 1889 to 1898, exported about 8,400,000 tons of sugar—that is, nearly 60 per cent of the entire German sugar production. This exportation has, however, only been rendered possible

by the opening of the English and, temporarily, the United States markets. It reached its climax in the case of our country in 1897—*i. e.*, before the new tariff came into force. Altogether, the exportation of sugar upon bounty from Germany has been as follows:

Year.	Raw sugar.	Refined sugar.
	<i>Tons.</i>	<i>Tons.</i>
1889	349,310	172,778
1890	545,738	250,651
1891	536,545	279,663
1892	375,912	231,680
1893	438,189	266,141
1894	522,979	305,337
1895	477,539	415,395
1896	585,369	402,131
1897	681,516	458,911
1898	516,660	514,429

According to these figures, it is above all the exportation of refined sugar that has increased. The value of the whole of the German sugar exports is estimated at \$50,600,000 for the past year, as against \$54,700,000 in 1897, \$56,300,000 in 1896, and \$38,700,000 in 1889. The bounties paid were \$4,380,000 in 1895-96, \$6,100,000 in 1896-97, and \$8,735,000 in 1897-98.

The bulk of German sugar exports goes to England, where the consumption per head of the population is about three times as large as in Germany. England received from Germany during the last five years:

Year.	Quantity.	Value.
	<i>Tons.</i>	
1894	509,144	\$31,600,000
1895	638,997	33,100,000
1896	517,463	30,800,000
1897	571,596	28,900,000
1898	639,625	32,200,000

Germany's sugar exports to the United States have been:

Year.	Quantity.	Value.
	<i>Tons.</i>	
1894	118,063	\$6,355,000
1895	81,430	3,890,000
1896	316,230	16,100,000
1897	376,286	16,017,000
1898	219,516	9,600,000

The efforts of our Government to stimulate the home production of sugar will no doubt lead to a further decrease of German exports to the United States.

There has also been a considerable falling off of the exports of German sugar to the Netherlands, until 1894 ranking third among the important markets for that article. At the present time, the shipments amount to only the tenth of their former size. They were, in 1894, 7,468 tons; in 1895, 4,170 tons; in 1896, 2,261 tons; in 1897, 1,324 tons; in 1898, 768 tons.

Belgium, too, received 7,260 tons of German sugar fifteen years ago, but only 895 tons last year.

In Sweden, as well as in Belgium, the duty upon sugar has been raised several times, and the home production of sugar benefited by not inconsiderable concessions in taxation. The beet culture has, in consequence, attained such dimensions in that country that at the present day the requirements of the home market can be supplied by the twenty or so sugar factories of the country, although Sweden's sugar consumption has nearly doubled within the last ten years. Germany's sugar exports to Sweden still amounted to 20,305 tons in 1893; last year, only 150 tons were exported there.

The exports to Denmark, and more particularly to Norway, on the other hand, have developed more favorably. Denmark received from Germany 6,163 tons in 1891, 8,457 tons in 1894, and 8,864 tons in 1898; Norway, 6,423 tons in 1891, 9,021 tons in 1894, 10,222 tons in 1895, 12,773 tons in 1896, 14,109 tons in 1897, and 18,172 tons in 1898.

The German sugar exports to Russia are rapidly declining; having reached their climax in 1893 with 9,480 tons (almost exclusively refined sugar), they amounted to 7,651 tons in 1896 and 4,156 tons in 1898, out of which 4,120 tons went to Finland.

There has been an increase in the German sugar export to Switzerland. It amounted to 14,737 tons last year, as against 3,651 tons in 1893.

Roumania has rendered the importation of German sugar quite impossible by her custom laws. The exportation to Portugal, on the other hand, has risen from 3,251 tons in 1895 to 9,559 tons in 1898.

The German sugar export to the East Indies and Japan shows a noteworthy development. The exports to Japan, which country formerly took but a few small consignments now and then, amounted to 9,035 tons in 1895, 13,687 tons in 1896, 26,515 tons in 1897, and 30,513 tons in 1898.

Into China, German sugar has, so far, not found its way in important quantities; 445 tons were sent there in 1898.

The exports to British East Indies were 2,455 tons in 1891, 4,866

tons in 1894, 18,971 tons in 1897, and 8,087 tons in 1898. The exportation to that country has, however, been rendered more difficult for the last few months by the supplementary duties which the Indian Government is levying upon bounty sugar. Germany had the lion's share in the exports of beet sugar to the East Indies; the German exportation thither is therefore most affected by the new duties, which, as in the United States, are levied to the extent of the bounties.

In Africa, the Cape and Morocco have hitherto been the most important customers; the exports to the Cape, however, have declined. Last year, 458 tons were exported thither, and 603 tons to Morocco.

The exports to Australia, which in 1891 still amounted to upwards of 5,000 tons, have gradually gone back to 1,766 tons in 1898.

In North America, Canada has again become an important market for German sugar. The exports to that country amounted to 14,200 tons in 1891, 15,844 tons in 1895, 21,896 tons in 1897, and 45,821 tons in 1898.

The exportation to South and Central America, however, which amounted to about 10,000 tons a year, has gone down, especially to Brazil and the Argentine Republic. A great part of the exports goes to Chile, which received 5,286 tons last year, against 6,125 tons in 1894; 1,187 tons were exported to Uruguay.

Important German newspapers, like the Munich Allgemeine Zeitung, Cologne Gazette, Frankfurter Zeitung, etc., are of the opinion that, to find a sale for her sugar, Germany will have to turn her attention more and more to the home market, which has hitherto been too much neglected.

LOUIS STERN,

BAMBERG, *November 11, 1899.*

Commercial Agent.

FLOUR IN MALTA.

There has recently been a great increase in the quantities of flour taken out of bond for consumption in these islands. For the first nine months of the present year, the quantity was 16,250,000 pounds. As nearly as I have been able to ascertain by an investigation which has been somewhat hindered by lack of official figures and classification on the part of the local authorities, this flour was laid down here principally by the several lines of steamers arriving from Liverpool, England. What proportion of American flour was received by way of transshipment from that port, it is impossible to state. It is a fact, however, that quantities of American flour are shipped here from Liverpool and credited to that port. It is a fact, also, that all classes of American goods coming indirectly are credited to

the port of transshipment, and not that of origin. From my investigations, however, it is safe to say that 75 per cent of the flour imported here, up to this year at least, was milled and shipped at Liverpool, which port has not only been in favorable competition with us, both in prices and quality, but has enjoyed the advantage of being nearer than New York, when goods have to be transshipped. The merchant here, by cabling his order to Liverpool, can obtain his goods in fourteen days, on an average.

Several merchants initiated a business with Minneapolis millers some years ago, but had to give it up on account of the time it took for their parcels to reach the United States seaboard, the ocean transit, and the loss, delay, and damage by rehandling at intermediate ports. Cost was also an incidental feature. Another obstacle was fluctuations in price which occurred while their goods were on the way. Of course, all of these things deterred them from renewing their orders.

Now that the importations of flour at this port have swelled so materially, an attempt should be made by our millers to reach this market in a more direct way and in less time. With the certainty of at least a monthly sailing service from New York for this port direct, I am sure that the volume of business in American flour, as well as in a good many other articles of American origin, would rapidly assume large proportions here.

JOHN H. GROUT,
Consul.

MALTA, *November 27, 1899.*

AMERICAN TRADE IN TURKEY.

Consul-General Dickinson sends from Constantinople, November 21, 1899, translation of an article which appeared in the French National Journal of Foreign Commerce on the 14th instant, describing the conditions affecting the present effort of American manufacturers to secure a part of the business of Turkey and the neighboring countries. The article reads:

CREATION OF A PERMANENT EXPOSITION OF AMERICAN PRODUCTS AT CONSTANTINOPLE.

The Constantinople correspondent of Sell's Commercial Intelligence, of London, writes that the consul-general of the United States, who has already succeeded in establishing a direct steamer line between America and Constantinople, is now occupied in accomplishing an enterprise which is followed with lively interest by the commercial world. He has formed a company of sixty manufacturers and American exporters with a view to create at Constantinople a permanent exposition of American merchandise.

Thirty or forty cases of goods have already been received, others are on the way, and several of the principal exporters of the United States are expected, in person, to regulate all the details of the working of the institution.

At present it has not been decided what the exact nature of the operations will be—sales at wholesale or retail, or only orders taken from the samples exhibited.

Whatever may be the decision, it is interesting from a financial point of view to note that the consul has succeeded in concluding with a local banker an arrangement thanks to which the future establishment will be protected from the risks necessarily incurred in granting credit in a foreign place. Without credit, in short, it would scarcely be possible to conduct business.

It is generally thought that the success of the enterprise will not be complete unless its promoters give it a wider scope than was at first planned. In fact, Constantinople has ceased to be the natural center for supplying Turkey. The inhabitants of the provinces of the Empire no longer come there to make their purchases; they make them in the city nearest their home.

As to the sellers in the interior of the country, they are mostly Armenian merchants who make their purchases directly in Europe or America and would not patronize the proposed depot unless they could find better prices there.

It would then be desirable to establish a central depot supplied by a hundred combined houses. This depot should have branches in the principal cities of the interior. To each branch should be attached a good native traveler, and he should have in store a stock of all the usual articles for sale in the region, for the country people, who are the principal customers, are not in the habit of giving their orders in advance. They buy at the time and to the extent of their present needs, and pay cash when they can or ask credit until the next harvest.

Each branch store should be in charge of a local merchant, who should pay cash for the goods furnished him or at least should give good security. He should be responsible for credit given by him.

The consul says:

There have been substantial additions within the last thirty days to the number of American exporters under whose auspices an exposition has been opened in this city.

The combination now includes 108 manufacturers and exporters, and negotiations with others are in progress. Among those who have joined the enterprise are the Hecker, Jones, Jewell Milling Company, North Packing and Provision Company; Swift & Co., of Chicago; Van Camp's Packing Company, Cleveland Store Fixture Company, Mosler-Bowen Safe Company, New Home Sewing Machine Company, Goulds Manufacturing Company, Payne Engine Company, Buffalo Forge Company, United States Glass Company, Standard Heating Company, American Cutlery Company, the Fairbanks Scale Company, Ely Hoe and Fork Company, Wright Shovel Company, Sargeant Lock Company, Henry Diston & Sons, New Haven Clock Company, C. H. Mulford Company, Cliff Paper Company, Concord Rubber Company, and others equally well known.

The suggestion in the foregoing article that Constantinople is no longer the center for supplying Turkey has been anticipated. This combination of American manufacturers includes, in nearly every instance, exclusive agencies, not only for Turkey, but for Greece, Egypt, the Balkan States, and southern Russia, and it is intended to establish branches in all of the leading cities of this region as

rapidly as safe arrangements can be made. Constantinople is still the natural point of distribution for all ports of the Black Sea and the regions adjacent thereto. The American end of the combination will be in the hands of its agents—W. S. Bigelow & Co., of New York—and with direct steamship communication, goods can be shipped directly to the Constantinople concern or to branch houses at the Mediterranean ports, as circumstances may require.

Under date of December 2, 1899, Mr. Dickinson sends another extract from a London trade journal speaking of the exposition and containing suggestions as to Turkish trade, as follows:

CAPTURING THE TURKISH MARKET.

An American business man in Constantinople, in a letter home, credits the energetic American consul-general with being instrumental in introducing American flour into that market, the importation last year aggregating about 90,000 bags, valued at upwards of £50,000 (\$243,325). Mr. Dickinson is also credited with having worked hard for months to establish direct steam communication between New York and Constantinople, the result being a direct line sailing about once a month, with the reduction of through rates on all classes of merchandise. The English lines are said not to like it; but, in the opinion of this correspondent, it makes possible the introduction and sale of many lines of goods in competition with English and German manufacturers. Referring more in detail to the introduction of American goods, the writer says:

"The last ship of the 'direct' line brought over something like 25 tons of wire nails from America, and more are coming by the next steamer. There seems to be an excellent field here in this line. A great deal of building is going on, almost all wooden buildings, and these are the nails used—called here 'points de Paris.' There is no question of our ability to compete in this line satisfactorily.

"Bolts and nuts will find a good sale. American locks, padlocks, butts and hinges, sad irons, hammers, broad knives, lemon squeezers, ice breakers, etc., are already introduced, and their sale might easily be increased. Meat choppers and raisin seeders are also bought from us.

"The leading shop here tells me that they tried German articles in these lines for a time, because they were cheaper and because they were enameled, instead of tinned; but their customers had so much trouble with them that they have gone back to the American goods.

"Our gas and oil stoves ought to be sold here, and I believe that one or two firms are getting out samples, Birmingham goods now being sold. American iron heating and cooking stoves are just beginning to find their way back into this market. They were formerly sold; but freights operated against them, and the Belgian and French articles cut them out—tiny, cheap affairs of sheet iron, some of them landed here as cheap as \$3, perhaps less. If an American concern would make similar patterns it could undoubtedly do an enormous business. But our own goods in the simple, cheap styles will go.

"Any manufacturer of iron and brass bedsteads who can compete with the Birmingham goods in price will do a big business here; easily, I should say, \$15,000 to \$20,000 a year. There is a great consumption of these goods. Practically no other bedsteads are used. As for general lines of hardware and novelties that might be sold, there is no end of them.

"Some credit is needed here, for the country is not rich, and credit is freely offered by English and German exporters; but American manufacturers are quite right in their suspicions of the trade in general. It is only in the rare cases of unquestioned character and responsibility that any credit ought to be granted. Then, however, our people will undoubtedly find it to their advantage to back up their agents here in every possible manner."

Our readers will doubtless remember that our correspondent in Constantinople called attention to the American consul's action some time ago. The fruits of his labors are now being gathered, and again we see how well-directed official assistance can assist trade.

SCARCITY OF BREAD IN PERSIA.

During the past two years, the price of all kinds of cereals in most of the cities of Persia has been abnormally high, especially in Teheran. This is probably due to several assignable causes.

Within the last few years, the population of Teheran has been steadily on the increase, while the means for providing the food supply have remained stationary. There has been very little addition to the area of the land under cultivation, and no improvement has been made in the methods of transport so as to utilize the surplus grain, which fails to find a market in some districts in times of scarcity.

The winter before the last was marked by very heavy falls of snow and severe cold, and in consequence a good deal of damage was done to the green crops. In some districts, the ravages of a blight added considerably to the loss, the result being that during the whole of the spring and the early part of the summer of this year, there was a great scarcity of bread and the minor necessities of life. Flour was imported from Russia, but not in sufficient quantities to give a continuous relief to the demand. Some legations, notably the English, purchased large quantities of wheat, had it ground into flour, and made bread on their own premises for the supply of their subjects and dependents. This legation had to get an order from the local government on a particular baker to provide a certain quantity of bread daily. This resource, however, sometimes failed, and servants and their families were left destitute or had to put up with a kind of bread largely compounded of other materials than wheat or barley. As bread in this country is much more an article of daily consumption than it is with us, a lack in quantity or a dearness in price quickly produces much hardship and distress among the poor people, whose means are never able to bear any unusual strain.

Last winter was exceptionally mild, and the rainfall greatly below the average, the result being that early in the summer there was a scarcity of water and a failure to meet the requirements for the

irrigation of the crops. Very little of the cultivation in Persia is in dependent of artificial watering, and if the springs or sources which have to supply this demand are not sufficient for the purpose, the effect on the harvest is more or less disastrous. It appears from reports that this year's harvest has not been a good one, and that the produce of wheat is not equal to the consumption, and consequently there is again a scarcity of bread; and such as is provided is of a very indifferent quality. Calculating from the present condition of the food supply, it is generally feared that as the season advances the bread difficulty of the earlier part of the year will be greatly intensified, and we shall be on the verge of a famine. It is not, however, improbable that the large landed proprietors, who receive their rent in produce, have stored up their proportion of the year's supply in the expectation of a still further rise in price; but if there is a seasonable rainfall, these will put it on the market for fear of loss. Up to the present, the prospect is not by any means cheering, but it is not yet too late in the season to expect an average sowing for the future crops and a decline in the prices of food.

Rice, which forms such a large staple of food in this as well as in other Eastern countries, which is grown largely in the provinces on the south of the Caspian, has fallen off in quantity and increased in price, thereby adding very considerably to the difficulties of the situation. In view of this fact, it is possible that the export of rice will be strictly prohibited, which will tend to minimize the severity of the tension and relieve the anxiety which is justly felt.

I have thought that the present state of the food question is sufficiently serious to make it the subject of a special report.

HERBERT W. BOWEN,
Consul-General.

TEHERAN, *November 1, 1899.*

MAGNESITE IN GREECE.*

Magnesite is found in the northern part of Eubœa; in Limnos; near Megara and as far west as Perachora; and in Locris and Phthivdis.

At Mondondi, it covers a large area near the surface; but they have sunk galleries there to the depth of 50 meters (164 feet). The veins of magnesite sometimes extend 100 meters or more below the surface of the ground. The mineral is generally sold in a crude state, but sometimes the Society of Public Works of Athens calcines it and manufactures refractory brick, at a temperature of 2,000°.

* The above report was made in answer to inquiries by a resident of Vermont, to whom a copy has been sent.

The largest owners of magnesite deposits in Greece are M. B. Boudouri, the present Minister of Marine; the Society of General Enterprises, and the Society of Public Works, Athens. There are a number of smaller owners of such lands or mines, among whom are Messrs. Ziller and Christomanos, who have valuable deposits at Pyli, Eubœa.

Greek magnesite is exported to England, France, Hamburg, Belgium, and the United States, at the rate of 25,000 to 30,000 tons per annum. It has been exported from Greece since 1870 and is used to make or line metallurgical furnaces for the process of Bessemer-steel making, for the fabrication of magnesium soils into artificial marble, etc.

The official analysis of the magnesite of Mondondi and of Pyli is as follows:

	Per cent.
Carbonate of magnesium.....	95. 12
Carbonate of calcium.....	4. 02
Silicic acid.....	0. 52
Moisture	0. 34
Oxide of iron.....	Traces.

The mineral is sold in the crude state, on board of vessels at the nearest harbor, at 23 francs (\$4.44) per ton. The cost of transporting the crude mineral to Liverpool and Hamburg is from 17 to 20 francs (\$3.28 to \$3.86) per ton, and to New York but little more. There is an export duty of 5 per cent ad valorem.

The above-named firms are the best parties from whom to buy. An American firm desirous of shipping large quantities of the mineral to home markets would do well to purchase a mine or deposit outright. There is a large tract of this mineral land for sale in Eubœa, and interested parties can learn the terms of sale by addressing Anast K. Christomanos, professor of chemistry in the University of Athens. Magnesite is also found in Asia Minor.

DANIEL E. MCGINLEY,

ATHENS, *October 19, 1899.*

Consul.

AUCTION OF SIBERIAN MINING LAND.

Mr. Peirce, chargé d'affaires at St. Petersburg, transmits, under date of October 28, 1899, a printed translation of the rescript of the Ministry of Agriculture and State Domains in regard to leasing by auction of gold-mining territory in Siberia. Part of the decree was printed in CONSULAR REPORTS No. 231 (December, 1899), page 553; the additional details follow:

The guaranty of 100,000 rubles (\$51,500) must be sent in by the bidder, separately from the application, in cash, Government bonds, or the securities of private

companies guaranteed by the Russian Government. In the case of applications through the post, the deposit must be sent in a separate packet.

In the event of several bidders offering equally good terms for one and the same system, the choice between them will be made by lot, in virtue of article 501 of the mining code.

On the final allotment of all the systems among the applicants, each one of them who has obtained a lot must, within a month after receiving notification thereof, make a contract with the Minister of Agriculture and State Domains, which must contain the following conditions binding on both parties:

SECTION 1. During a term of fifteen years from the day of signing the contract, the lessee is allowed the sole right of prospecting and working gold in the whole system of the River ———, falling into the Sea of Okhotsk; with the right of using the timber, in accordance with article 514 of the mining code, and all the reindeer fodder and pasturage situated within the limits of the locality bounded by ———.

Remark.—The use of the reindeer fodder and pasturages situated in the said lot must be open to the reindeer of the local inhabitant at all times, and to the reindeer of the lessees of other systems, during their passage through the lot.

SEC. 2. Beyond the said exclusive right of prospecting and working the auriferous deposits in the system of the said river (section 1) and the said restricted right of pasturage in the locality in question, the lessee is allowed no other rights in regard to carrying on in these localities any other operations or methods of exploitation whatever. He must not hinder the local inhabitants in their occupations of hunting and trapping in any of the localities stated or in their fishing, either on the River ——— itself, with all its tributaries, or along the shores of the Sea of Okhotsk. Lessees of other systems have the right to use the bays at the mouth of the said river for unloading and warehousing their stores.

SEC. 3. The preliminary prospecting of the system allotted to the lessee must be completed during the three consecutive working years following the conclusion of the contract, reckoning each of them from the 1st of June of one year till the 31st of May of the next, thus allowing not less than three winters.

On forwarding workmen hired by the lessee from Vladivostock or any other point, a medical certificate must be shown to the local police of the absence of sick persons among the party, or of persons of weak health, and especially of any suffering from infectious diseases (in particular syphilis). Moreover, the lessee is bound: (a) To maintain at the place of the works an assistant surgeon with all necessary medicines; (b) to pay to the Crown 1,000 rubles (\$515) annually for the maintenance of a physician; (c) to keep in the locality leased a number of police corresponding to that of the workmen, in the proportion of one to thirty, and, in any case, not less than one policeman, furnishing each of them free with food, warm clothing, the necessary arms and lodging, and paying to the Crown for the wages of each policeman 600 rubles a year, and 2,000 rubles (\$1,030) a year for the maintenance of an assistant district engineer and police inspector; and (d) to furnish the assistant district engineer, police inspector, and physician with apartments, including heating and lighting, together with suitable premises for office, dispensary, and prison, as well as with means of conveyance—in accordance with the law of May 13, 1896, concerning justices of the peace in the gold-mining regions of eastern Siberia. Similar obligations are imposed upon lessees as to an additional salary for the justice of the peace and furnishing him with apartments and means of conveyance, in case of the subsequent establishment of this office for the region leased.

Remark 1.—The term appointed in this paragraph for the completion of the prospecting may be altered in case of force majeure.

Remark 2.—The sums stated in b and c of the present paragraph are payable by the lessee a year in advance, at the beginning of each year of the lease.

SEC. 4. The lessee is obliged: (a) On the completion of the preliminary pros-

pecting (section 3) to begin operations for getting the gold in the locality assigned him, carrying on the work himself, without subleasing it, and (b) to submit to the laws and regulations, alike now in force and such as may be hereafter enacted, concerning the conducting of mining operations.

Remark.—The engagement of foreign employees is allowed in conformity with note 2 to clause 5 of the amendment to article 661 of the mining code (1895), not otherwise than with the special sanction of the governor-general of the territory of the Amur on each occasion.

SEC. 5. The immediate inspection of the performance by the lessee of the duties imposed upon him by sections 2, 3, and 4 will be established by the local assistant district engineer with the approval of the head of the Irkutsk mining board.

SEC. 6. On each pood of slime gold obtained from the locality leased, the lessee pays the Crown — rubles, as also the cost of refining, in accordance with the mint code.

SEC. 7. The account and mode of collecting the said dues on the gold must be effected in accordance with articles 782, 783, 786, 787 (1895), 789 (1895), 791, 792, 797, 798, and 801 of the mining code, as well as with the laws and regulations that may hereafter be enacted on the subject. In case the lessee shall desire to receive an advance on the slime gold at the branch offices of the State Bank of Russia, he may do so, in accordance with the existing rules, with the permission of the Minister of Finance.

SEC. 8. By the expiration of the term of the lease, the lessee is bound to have made a plan of all the gold mines being worked by him and also of the mines discovered which he wishes to retain for himself. In this plan, the exact boundaries of each mine must be shown, so that on the claims being allotted in accordance with them, the lessee may receive the survey documents for the said mines; after which all the remaining portions of the locality, heretofore at the disposal of the lessee, become free for prospecting and working by other persons.

Remark.—The allotment to the lessee of the claims referred to in this paragraph is effected without the observance of the regulations contained in the mining code now in force, concerning the shape and extent of the areas to be allotted for gold mines, as also the distance between the latter.

SEC. 9. After the lessee has received, as aforesaid, the surveys and documents for his mines, the latter become subject to the general regulations, alike already published and such as hereafter may be made concerning gold-mining operations on Crown lands, paying all the established taxes and dues on this industry to the Crown.

SEC. 10. As security for the fulfillment of the duties set down in the preceding paragraphs, a sum of 30,000 rubles (\$15,150) will be retained from the deposit made by the lessee on the day of the auction, which amount will be placed in the general treasury as a deposit of the mining department. In the event of the nonfulfillment by the lessee of the stipulation laid down in section 3 and remark 1 thereto of these conditions, for the completion of the preliminary prospecting of the lot in the course of three years (section 4), the contract shall be considered to be broken, and the whole original deposit (30,000 rubles) is forfeited to the Crown. Should the lessee fail to pay in at the beginning of the year the sum indicated in the same section 3 for the maintenance of the physician, police, and personnel of the Government inspection, the Minister of Agriculture and State Domains will have the right to retain from the deposit, on behalf of the Crown, the necessary sums, while the lessee is bound to make good the deposit to the above-mentioned full amount; failure to observe this condition within six months from the day when the deductions were made from the deposit deprives the lessee of the right to the continuation of the lease, and the remainder of the deposit is forfeited to the Crown. On the expiration of fifteen years, as also in the case of the lessee waiving the further

lease of the locality allotted him, after giving due notice thereof a year in advance, the deposit will be returned to its owner in full, while to the property of the lessee waiving his lease will be applied article 322 of the mining code.

Remark.—The lessee has not the right to give notice of his waiving the lease before the expiration of three years (section 3) from the day of signing the contract.

SEC. 11. The lessee has the right, each time with the authorization of the Minister of Finance in conjunction with the Minister of Agriculture and State Domains, to invite partners in the operations of prospecting and working the gold in the locality assigned him, as also to form with this object societies and companies, or to transfer his rights to another person, without, however, dividing, in the latter case, the system leased into smaller lots.

SEC. 12. In all matters not specified in the present conditions, the lessee is subject to the general laws concerning the gold-mining industry in the Empire in general and that in the maritime territory in particular.

BRIEF ACCOUNT OF THE RESULTS OF THE SEARCHING AND PROSPECTING FOR GOLD
CARRIED OUT BY THE OKHOTSK-KAMCHATKA EXPEDITION ON THE NORTHWESTERN
SHORE OF THE SEA OF OKHOTSK.

[Drawn up by Mr. Bogdanovitch, M. E., head of the Okhotsk-Kamchatka expedition.]

In consequence of the information existing as to the occurrence of gold on the shore of the Sea of Okhotsk, the Ministry of Agriculture and State Domains, in accordance with the statute of the committee of the Siberian Railway which received the imperial sanction on the 13th of May, 1895, organized a special expedition to investigate the auriferousness of the shores of the Sea of Okhotsk, of the coast of Kamchatka, and of the Shantar Islands, where, in case of the discovery of workable gold deposits, their development by private enterprise might be expected. This expedition, organized and equipped by Mr. Bogdanovitch, M. E., continued its explorations for three years, embracing the extensive stretch of coast about the Sea of Okhotsk from Nikolaievsk, on the Amur, to Okhotsk, and the whole western shore of the peninsula of Kamchatka. The results of the labors of the expedition justified the hopes placed upon it, as the preliminary search, combined with the detailed geological exploration of the regions traversed, proved the presence of gold in many river valleys between the left bank of the River Udá and the former port of Ayan. After the discovery of the existence of gold, subsequent prospecting was directed to the location of the auriferous beds and the determination of the percentage of gold contained in them. More detailed prospecting, by which the total quantity of the precious metal is determined, did not form part of the object of the expedition, as requiring a more prolonged and exhaustive examination of certain localities.

The labors of the expedition proved the undoubted importance, as regards richness in gold, of the ridge or belt of mountains lying between the Jugjur watershed (Stanovoy Range) and the elevations along the coast. The presence of gold in various river valleys and the relation of these valleys to the said belt of mountains justify the distinguishing of six regions in the country explored, which embrace seven different river systems, presenting data encouraging further search for gold.

(1) *The systems of the rivers Aldamá and Ui.*—The preliminary exploration of the system of the River Aldamá was carried out under unfavorable conditions in winter and spring; samples taken from the slope sides showed only the presence of gold gravels with coarse magnetite, in the main situated along the streams in the belt between Jugjur and the shore ranges. Along the River Ui, belonging in its upper course to the same belt of mountains, was discovered a thin stratum of dense sand with slight signs of gold.

(2) *The system of the River Lantár.*—Here preliminary exploration showed the presence of gold alike in the main valley of the Lantár and along its tributaries and smallest affluents—in various spots, nine in number. Prospecting was carried out in three areas:

(a) In the valley of the Lantár along the main stream, at a distance of 128 kilometers (79.5 miles) from Ayán, and about 53 kilometers (32.9 miles) from the mouth. Out of thirty prospecting shafts, signs of gold were met with in thirteen along the lower line, the shafts with signs of gold situated nearest to the river bed remaining unfinished. Among the shafts completed, in No. 4 was discovered a bed with an average yield of 2.6 gr.* to the ton; in No. 18, with 1.12 gr.; in No. 19, with 2.29 gr. The gold found was both fine and coarse, flat and bright; fineness, 897.9.

(b) Along the stream Durúkin, falling into the Lantár on the right, 5 or 6 kilometers (3.1 or 3.7 miles) above the first prospecting, three lines of prospecting shafts were made; among twenty-three of these shafts three were found to yield very good signs of gold. In four shafts was found a bed with an average yield of 0.8 to 1.4 gr., the gold being fine, even, and bright; fineness, 898.9.

(c) Along the Kaichakit stream, a right tributary of the Lantár, 13 kilometers (8 miles) below the prospecting on the middle course of the Lantár, three lines of shafts were dug. Among eighteen of these shafts, indications of gold were found in seventeen. In the lowest line, two shafts disclosed a bed with an average yield of 3.4 to 8.12 gr. per ton. From the bottom of the shaft and its cracks were taken 69.67 gr. of gold. The trench between these shafts disclosed a bed of 0.5334 meter (1.7 feet) in thickness with an average yield of about 26 gr. per ton. In the second line, two shafts showed a bed with an average yield of 0.3 to 3.4 gr. per ton. Shallow placer with rich pockets. Gold coarse with nuggets or fine, but dull; fineness, 850.

(3) *The system of the River Mutl.*—During the preliminary prospecting here, signs of gold were met with along the left head waters of the river, where coarse, heavy gold was found.

(4) *The system of the River Nemdi.*—Signs of gold were found in many places, both in the valley of the Nemdi, and along its affluents, in the mountain belt between Jugjur and the shore ranges; whereas no signs of gold could be met with along the springing from the Jugjur watershed. The gold found was in the form of large, rolled grains or small, spongy masses, with coarse magnetite or fine crystals of brown iron ore from pyrites.

(5) *The system of the River Kyrdu.*—In this extensive system, geologically explored in several directions, samples direct from the slope sides and from prospecting shafts were only taken along one of the left tributaries, where good signs of gold were met with at the water level in the form of large, rolled grains.

(6) *The system of the River Jand.*—In the system of this river, which is the left tributary of the Udá, the expedition made first discovery of gold, after ascertaining the geological and orographical isolation of the mountain belt, whose auriferous character was completely confirmed by further searching. Only in this system was the soil found to be perpetually frozen. At a depth of 4.8 meters (15.7 feet), good signs of gold were met with.

The observations of the expedition ascertained the fact that the climatic conditions of the regions explored, although somewhat severe, present no obstacles to the successful winter prospecting and subsequent working of the gold fields. The working period, however, is shorter than in the Amur region and eastern Siberia, viz, ninety days. Workmen, materials, and stores must be brought by sea.

* 1 gram=15.43 grains.

RUSSIA'S FINANCIAL STATEMENT.

The report of the controller of the Government Council of Russia, showing the receipts and disbursements of the imperial treasury during the year 1898, has just been published, and is as follows

Description.	According to the budget.	Actually spent.	Increase, compared with the budget.
Ordinary receipts.....	\$702,695,982	\$816,200,039	\$113,504,057
Ordinary disbursements.....	695,293,885	699,511,880	4,217,996
Extraordinary receipts.....	1,699,500	45,226,185	43,526,685
Extraordinary disbursements.....	63,841,826	213,176,801	149,334,975

The excess of the receipts over the expenditures amounted to \$116,678,159—\$109,286,052 over and above the estimates when the budget was formed.

A comparison of the ordinary incomes with those estimated in the budget of 1898 shows that in thirty-one paragraphs of the budget the receipts exceeded the estimates by \$114,810,622, and in four paragraphs the estimates fell off \$1,306,564. The total excess of incomes over the estimates amounted to \$113,504,058.

The resources of the Government treasury, added to the surplus of the budgets of former years, is as follows:

INCOME.

Ordinary income.....	\$816,200,039	
Surpluses of the budgets of former years.....	5,822,383	
		\$822,022,422
Extraordinary resources.....	45,226,185	
Free surplus from the budget of former years.....	2,977,511	
		48,203,696
Spent of the free money on hand for fully covering the extraordinary expenses.....		42,462,563
Total		912,688,681

EXPENSES.

Ordinary expenses made and to be made.....	699,511,880
Extraordinary expenses made and to be made.....	213,688,801
Total	912,688,681

The surplus of the Government treasury, which on January 1, 1898, formed \$110,587,723, has been balanced by the budget of the past year, for covering extraordinary expenses, at \$42,462,562, instead of \$54,740,229, estimated at the time the budget was prepared.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, November 17, 1899.

AMERICAN RACING HORSES IN RUSSIA.

A false impression has been created in the United States, as well as in Europe, by the publication of a statement that there is discontent and dismay among Russian owners of trotters who have imported American horses for the purpose of improving the Russian breed, which everyone knows can not compare with the American trotter. It is said that after limiting the winnings of American horses, they permitted horses bred in Russia, crossed with American animals, to race for a time; but when they proved their superiority, the same restrictions were imposed on the cross-bred as on the pure-bred American trotter. This, I am informed by well-known American horsemen long connected with leading racing stables in Russia, is too broad a statement. While American horses which outclass Russian horses as trotters have not been permitted to trot in all classes for some years, and for that reason are unable to win much money in Russia, American horses cross-bred with Russian were permitted to start in all but three races that were given in Russia during the past season, viz: The "Orloffsky," 3,000 rubles; the "Grand Duke's prize," 10,000 rubles; and the "Emperor's prize," 25,000 rubles.

At the summer meeting in Moscow, there were 341,500 rubles hung up in prizes, and half-bred horses were permitted to start in all but the three races named above, leaving 303,000 rubles in the purses for which the half-bred horses competed.

There are summer and winter races in Moscow and fall and winter races in St. Petersburg, where 866,000 rubles are offered in prizes annually, and the half-bred horses compete for 747,000 rubles, all but 113,000 rubles of the entire sum.

A few years ago, American horses could start in all races in Russia, but they were so much faster than the Russian horses that they were barred from the big races in order to protect their own interest; but, as a majority of Russian horsemen now own American horses, and more are constantly being bought, there is a growing sentiment in favor of their being permitted to start in all races except those intended exclusively for Russian horses. At one time, it was noted with satisfaction that American horses had been purchased for the Russian imperial studs, but recently every horse having American blood has been removed from these studs. Disinterested persons declare this to be shortsighted policy, and say the Americans do not care what nationality a horse is, provided he is fast; and notwithstanding American horses are the best trotters in the world,

there will be a big demand in the United States in the near future for Russian mares, because after interbreeding the different families for so many years, Americans will be glad to get an outcross with trotting blood and muscle.

The breed of Russian horses generally accepted as typical is the "Orloff," founded by Count Orloff-Chemenski at the end of the last century, being a cross between the Arabian stallion Smetanka and his descendants with German, French, Belgian, and Dutch, but principally English, mares. The Orloff is not only the light-harness horse of Russia, but almost the only carriage animal in use. While there is no great uniformity in size and form, the best studs are 16 hands high and weigh 1,100 pounds, with heavy manes, bushy tails that reach within a few inches of the ground, and iron limbs that show great muscular development. They are driven at a furious rate, even through the principal streets of St. Petersburg, there being no limit to speed in the city limits, the center of the streets, next to the street-car tracks, being reserved for the fast driving. During the winter months, single, double, and three-horse-abreast (*troikás*) sleighs dash along the streets at three-and-a-half and four minute gait. The color of the horses is black and gray, the latter being the purest.

Next to the Orloff comes the "Bitug," which is a draft horse about 15 hands high, weighing 1,000 pounds, very strong and quick, well formed, beautifully developed, enormous muscle power, with a head that resembles the Arab, fine ears, and large, full eyes, of different colors.

Among the more prominent breeders who have spent large sums in importing American stallions and mares for breeding purposes are Count Vorontsoff—who, until quite recently, was the head of the Imperial Court—Prince George of Leuchtenberg, Prince Serge Golitzine, S. M. Konchin, Nicolas Konoplin, G. G. Elissieff, and Mr. Teleguin, the latter being the owner of Baron Rodgers (2.9¾). Among the best-known American horses now owned in Russia are Victoneere, Baron Rodgers, Beyruth, Captain Wallbridge, Sam Malo, Quarter Stretch, Quarter Cousin, Nominee, Nominator, Harlow, Flush, Crathmore, Dempsey, and Alvin. Baron Rodgers holds the world's record (9.42) in 4-mile races by fifteen seconds. He won between 14,000 and 15,000 rubles during the present season.

American horses soon become acclimated in Russia and after the first year stand the climate as well as native animals.

No horse is barred from any race (except the three specially mentioned above) on account of his speed, but fast horses are handicapped by being required to pull more weight and starting a few yards farther back. In trotting races at St. Petersburg, but two

horses start in a heat from designated places at opposite sides of the track, at the sound of an electric bell, which prevents jockeying for position. The horses follow each other twice or three times around the track, the distance being either 2 or 3 miles. No matter how many entries there are in a single race, but two horses are permitted on the track at the same time, and the one making the best time wins the race. In Moscow, the races are managed on the American plan.

Races for the purpose of testing the endurance of horses are frequent, where horses are driven from 25 to 50 miles, then finish the last 1 or 2 miles at the limit of their speed. The horse finishing in the best condition and showing the greatest speed at the close is the winner.

Some of the race courses are divided into separate tracks 10 feet wide and separated from each other by a strip of sod 2 feet wide, giving each horse a separate track, the difference in the length making the handicapping distance for horses of various speeds, which avoids the struggle for the pole.

No "kicking" is permitted from drivers at the close of heats. Each heat is a race; at the conclusion, men carrying big blackboards showing the number, name, and time made by each horse pass in front of the grand stand and through the grounds, in order that all may know the result.

During the winter, race courses are flooded each night and horses trot on 3 inches of ice.

Only stallions are used in cities, mares being kept in the country or shipped to Germany or Austria, where they are in great demand.

American pneumatic sulkies, harness, boots, gaiting appliances, etc., are in general use here.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, *October 28, 1899.*

DAIRY EXPOSITION AT ST. PETERSBURG.*

On September 1-13 the Russian dairy exposition opened in St. Petersburg, organized by the Imperial Free Economic Society.

The exposition consisted of the following sections:

(1) Milk and milk products: cream, curds, sour cream, butter, all kinds of cheese, "koumiss," etc.

(2) Apparatus and machinery for dairy purposes, including separators, radiators, churns, presses, pasteurizators, apparatus for scientific and practical examination of milk products, etc.

* The above report was made at the request of a resident of New York, to whom Advance Sheets have been sent.

- (3) Demonstrative section in action.
- (4) Samples section.
- (5) Scientific section: investigations, collections, models, etc.
- (6) Auxiliary means: salt, ferment, color, etc.
- (7) Farm buildings.
- (8) Conservation and transportation of products: car cellars, refrigerators, etc.
- (9) Motors used for dairy purposes.
- (10) Apparatus and appliances for making fodder.

The rules permitted foreigners to participate in section 2, and they exhibited many novelties, including a radiator, combining in itself a separator and a churn, which separates the milk from the cream and churns butter; and a milking machine of English construction, for which purpose there were ten cows at the exposition.

The demonstrative section showed the public the whole of the dairy work, where milk was worked into butter and cheese. At the end of the exposition building were two large cellars, made above ground, the space between the walls being filled with peat, the exterior walls being covered with turf, where a temperature of 22° F. was maintained; the butter and cheese sent to the exposition being kept there. Among the firms exhibiting machines and apparatus were "Rabotnik," representatives of twelve foreign firms, Nobel, N. W. Vereschaguin, and others. Separators of different types and churns, from the smallest moved by hand to those run by kerosene motors, were exhibited. There were four hundred exhibits of butter and two hundred and fifty of cheese from the interior of Russia, including Siberia, and several exhibits of foreign butter as well as colors for butter, which play an important part in the export of butter.

In section 5 there was a bacteriological collection.

A car cellar was exhibited by the Kolomensk Machine Works.

The following prizes were distributed: From the Ministry of Finance, forty-three, viz, two gold medals, four large silver medals, seven small silver medals, ten bronze medals, and twenty diplomas; from the Ministry of Agriculture, 800 rubles' (\$412) worth of medals; from the Free Economic Society, 1,500 rubles' (\$772) worth of medals; from the city of St. Petersburg, 500 rubles' (\$257) worth: a bowl, two gold and several silver medals.

The entrance fee was 30 copecks (15 cents) at the beginning, but was reduced to 10 copecks (5 cents) before the close.

The following is a list of the awards:

Butter for home markets.—Seven large gold medals, eleven small gold medals, eighteen large silver medals, thirty-three small silver medals, twenty bronze medals, twenty-three diplomas.

Butter for export.—Two large gold medals, ten small gold medals, fourteen large silver medals, eighteen small silver medals, forty bronze medals, sixteen diplomas.

Cheese, curds, and sour cream.—Three honorary diplomas, two large gold medals, four small gold medals, thirteen large silver medals, fifteen small silver medals, ten bronze medals, five diplomas.

Separators.—One honorary diploma, three small gold medals, two large silver medals, three small silver medals, three large bronze medals, four small bronze medals, two diplomas.

Milk, cream, koumiss, and kefir.—Three large silver medals, three small silver medals, three bronze medals.

Steam motors used in the dairy industry.—One small gold medal, one large silver medal, four small silver medals, two bronze medals.

Apparatus for sterilization, warming, and cooling the milk.—One large silver medal, two small silver medals, one bronze medal, one diploma.

Milk crockery.—Three small gold medals, four large silver medals, four small silver medals, three bronze medals.

Auxiliary substances.—One small gold medal.

City farms.—One gold bowl and one diploma.

Farm buildings.—One small silver medal, two bronze medals.

Churns.—Three large silver medals, four small silver medals, three bronze medals, two diplomas.

Miscellaneous apparatus.—One honorary diploma, two large gold medals, one small gold medal, five large silver medals, four small silver medals, six bronze medals.

Total.—Five honorary diplomas, thirteen large gold medals, thirty-four small gold medals, sixty-four large gold medals, ninety-one small silver medals, one hundred and one large bronze medals, four small bronze medals, fifty diplomas.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, November 5, 1899.

ADVICE TO EXPORTERS.

Consul-General Guenther writes from Frankfort, October 19, 1899:

Kuhlow's German Trade Review and Exporter of October 18, 1899, published at Berlin, contains the following article, "Color versus business," which should receive the attention of American manufacturers of cloth, sewing needles, and leather goods, who sell to the countries named. It illustrates how important it is to study the tastes of the people to whom one wishes to sell, not only as to shape of the articles, but also as to color. It is by paying close

attention to the study of special tastes that Germany has made such headway in gaining foreign markets. Let our people do the same, and the results will speak for themselves.

COLOR VERSUS BUSINESS.

It has been recently stated that Germany has captured much British trade in Russian markets simply by catering to the popular taste for red in wearing apparel. English sewing needles have also been ousted in Brazil because they were wrapped in the old-fashioned black paper. The manufacturers of Saxony went in for pink, and hold the market. A French exporter of high-class leather goods has just discovered the Heathen Chinee's antipathy to green by the non-sale of his elegant articles made up in that color. Moral: Leave color fancies for the drawing-room, and make money from the rainbow if the market requires it.

PROJECTED CABLE TO ICELAND.

The projected telegraphic communication with Iceland is a question of interest to all northern Europe. Especially will it be valuable in assisting meteorological observations, the various observatories thus being able to obtain daily telegrams concerning the state of weather in Iceland. It often happens that storms from the north sweep over Europe without previous atmospheric indications of their approach.

The main question at issue, however, is laying the cable. It will be 650 kilometers (403.89 miles) in length, extending between Iceland and the Shetlands. The Northern Telegraph Company, of Copenhagen, Denmark, has offered to lay this cable under the following peculiar contract: The Icelanders shall pay to the company a yearly subsidy of \$9,380 for twenty years; Denmark is also to pay a yearly subsidy of \$13,400, and the neighboring countries are requested to contribute an aggregate sum of \$91,450; thus, together, the interest included, an amount of \$1,407,000 is desired by the company. Undoubtedly, this business would yield a fair profit, as the usual price of laying a submarine cable is not higher than \$1,200 a sea mile, and, according to this figure, the cost of laying the proposed line would not exceed \$850,000.

Another telegraphic company has offered to lay the cable between Iceland and the Orkney Islands (a greater distance than the proposed line) for about \$850,000, thus showing that the amount asked for by the Danish company exceeds by more than 50 per cent the expenses involved in laying the cable.

Not only, however, is the price asked exorbitant, but the manner of the payment itself is strange. The inhabitants of Iceland (72,000 or 73,000 peasants and fishermen), who for centuries have lived in no affluence, are asked to pay more than \$187,600 for a cable for

which they have almost no use, while it will bring other nations extraordinary advantage.

Apart from the already mentioned benefit to meteorology, the cable will also be of particular service to American, English, French, and Norwegian fishermen who carry on their trade on a large scale in the neighborhood of Iceland.

VICTOR E. NELSON,
Consul.

BERGEN, *December 5, 1899.*

FISHING IN ICELAND.

A large fishing company has lately been formed at Leydisfjord, Iceland, chiefly for the purpose of catching plaice (*Pleuronectes platessa*), with Holland as the principal market.

The company will be known as the Gardar Fishing Company, and will next year commence operations with a fleet of fifteen steamers and twenty sailing vessels. The necessary funds were for the most part supplied by English capitalists, although the business has been turned over to others and is now under the control of the Danish vice-consul at Stavanger, Norway (Mr. Yens M. Hansen).* Mr. Herman, a resident of Holland, is the director, and four or five of the citizens of Leydisfjord form the board of managers.

The directors are at present forming plans for erecting houses and piers, constructing roads, etc., besides making arrangements for keeping the fish in good condition until placed on the markets of Holland. Some of the necessary work is already under way, and a large sum of money has been voted by the committee for the purpose of carrying it out.

A force of about sixty or seventy men is engaged in making a dam or basin in the valley of the Leydisfjord, which will be filled with water by connection with a river, so there will be no lack of ice for packing the fish. The ice will be conveyed to the company's depot at Bodareyri by means of an electric railroad. There is another concern already established at this place—Walthne Brothers.

Iceland is becoming a fishing center. There are prospects of catching an abundance of fish in the neighborhood. The island is a possession of the Kingdom of Denmark and lies in the Atlantic Ocean, about 600 miles west of Norway and 250 miles east of Greenland. It contains an area of 39,566 square miles, with a population of 72,445. The legislative power is vested in the Althing, consisting of thirty-six members, six of whom are nominated by the King of

* To whom tenders for fishing gear, ice tools, electrical apparatus, etc., should be addressed; or they may be sent through the United States consulate at Bergen.

Denmark, the other thirty being elected by universal suffrage. The head of the administration is a minister, who is nominated by the King and is responsible to the Althing, while the highest local authority is vested in the governor, who lives at Reykjavik. The religion is Lutheran, and, besides common schools, the city of Reykjavik has a college attended by about one hundred scholars. Commerce consists of the exchange of wool, butter, skins, fish, and oil for European manufactures.

BERGEN, *November 1, 1899.*

VICTOR E. NELSON,
Consul.

OYSTER CULTURE IN FRANCE.

Oysters are a luxury in Europe. The natural beds have been exhausted, as the American beds are rapidly becoming, and artificial culture has long been depended upon for a supply of this luscious bivalve. The chief breeding ground in France is the Bassin d'Arcachon, a triangular tidal bay about 9 miles on each side, entirely landlocked and opening out of the Golfe de Gascogne (Bay of Biscay) into the Department of Gironde by a narrow channel about 3 miles in length. The coast is sandy and deserted. A solid forest of maritime pines (*Pinus pinaster*), hand planted during the present century, has checked the inland march of the sand dunes and protects the basin from the southwest winds which blow fifty out of the fifty-two weeks of each year. The shallow bay is networked with navigable channels, between which at low tide rise the half clay, half sand flats utilized for breeding the succulent mollusk. During the low spring tides, the flats are covered with quantities of a cheap variety of ordinary roofing tile, which has been previously coated with a sort of coarse whitewash. The spawn brought in by high water catches on these tiles, and the lime of the whitewash helps the little mollusk to form his first shell. Toward winter, these tiles are taken up and carefully scraped. The oysters, as large now as one's thumb nail, are spread in flat covered trays, or baskets, of closely woven osier to protect them from the starfish, crabs, and other enemies, and moved nearer the salt marshes, on the east side of the basin, to grow. When they have become a little accustomed to an independent existence, they are placed in trenches a little below water level, which are provided with sluice gates, by which they can be flooded at will. They are thus prevented from being chilled in winter or dried up in summer, and are easily protected from enemies, the gates being covered with wire netting of fine mesh; but the primary aim of the gates is to accustom them to being deprived of water—that is, to teach them to keep their valves tightly closed when out

of it. In about eighteen months their education in that respect is complete, and they are raked up, barreled, and sent on a journey of several days to the copper rocks at Marennes, France, and to Whitstable, England, to fatten and assume the bilious green tint and brassy flavor demanded by European epicures. About 250,000,000 are shipped annually. The work on the beds is done by bare-footed men and women, both clad in bright crimson knee breeches and sweaters, which render the sexes quite undistinguishable. The regular trenches and dikes, kept in place with spiles interlaced with wattles, look like a Dutch garden.

To one accustomed to the plump, clean, white and gray American bivalve, the flabby, yellow or greenish European specimen is not inviting. The shells are flat, thin, irregular, and as slimy and corrugated as an old barnacle, while the inmates are about the size and thickness of a 50-cent piece for a 5-inch shell. On the spot, they sell from 7 to 10 cents a dozen. Elsewhere, they command more, and the greener, the higher prices. Oysters are never eaten here except on the half shell. A suggestion to put them into soup or patties, to scallop or stew them, shocks a French chef as a proposition to broil a watermelon would a Carolina cook. I think a "pan roast" would be regarded here as little less than sacrilege. Even when by much persistence you have achieved some form of cooked oyster, the chances are infinite that the most noticeable result will be a fit of homesickness caused by regretful memories of the delicious "Blue Points" or succulent "Lynn Haven Bays." It is to be hoped that our oyster men will learn and practice the art of propagating and nourishing the oyster so as to preserve both its superior size and flavor.

ALBION W. TOURGÉE,

BORDEAUX, *November 30, 1899.*

Consul.

BANKING, BROKERAGE, AND CREDITS IN FRANCE.

I find that many American firms, anxious to participate in our export trade, are quite unfamiliar with some of the primary laws of foreign commerce—for example, the ordinary rules governing payments for merchandise.

Payments in Marseilles are effected by means of bank credits or documentary drafts. In the former case, the American or Marseilles buyer, as the case may be, furnishes the seller with a written engagement from a London or Paris banker to the effect that such banker will accept the drafts of the seller, and pay them at maturity

upon delivery of the documents forming the title of the property in the goods, bills of lading principally. The London or Paris banker, by this system, assumes the responsibility, in which the seller has no future concern. The banker may deliver the documents to the buyer against payment or give credit, according to his judgment and at his risk. In case the banker fails after having accepted the drafts and thereby obtained possession of the title of the property, it is well established in Europe that the buyer is responsible and that the seller would have a right to pursue him for reimbursement, since it is considered that the buyer supplied the bank credit, chose the banker, and is therefore responsible for his banker. In the United States, this principle does not appear to be clearly admitted in law.

In a payment by means of documentary drafts, the seller, dealing with a firm in good credit, draws directly on the buyer and pins the documents or titles to property, bills of lading, etc., to the draft. It is stipulated that the draft is payable against delivery of the documents. The seller remits his draft to his banker, gets his money under discount, and the draft may pass through the hands of many bankers before it finally reaches its destination and is paid. In this case, the seller's responsibility never ceases until the day of payment; but it is very limited as long as the bank that holds the draft is solvent. Of course, if a bank should act against the stipulations of the draft and deliver the documents without payment, it, and not the seller, would be responsible.

Marseilles is not a banking center, and there are no well-determined rates of exchange. All banking business of any importance is done through London or Paris. The London rates are generally more favorable, and that city absorbs the larger share of business between Europe and America.

Americans, desirous to deal directly with the foreign purchaser, are often impatient when they discover their own impotence to do so without the intervention of the French broker. They do not realize that the broker's commission is paid willingly; that the French buyer or seller regards his services as indispensable; and that, having been a commercial factor as old as the world, the broker will continue—here at least—to be the inevitable medium of exchange for years to come. In former times, all French brokers were sworn Government nominees, with privileges and functions debarring outsiders from usurping their places. At present, stock brokers and ship brokers only are nominated by the Government. Any person can therefore set up as an ordinary broker. They carry samples, appraise goods, and determine questions of quality. They do not unload, ship, or forward goods, nor do they store them.

The best brokers of Marseilles adhere strictly to their trade principles, take no risks, and buy and sell on order, giving the buyer the name of the seller, and vice versa. It might be presumed that buyer and seller thus coming in contact would thereafter operate without a middleman, but experience shows that when occasion arises for a new transaction, both buyer and seller again seek a broker. There is nothing to prevent a broker from buying or selling on his own account, but such men fall into disfavor. A broker suspected of having an interest in the rise or fall of prices is no longer an impartial agent.

Many Marseilles brokers exercise great influence, having special knowledge of articles like wheat and oil seeds. Their emoluments are one-third of 1 per cent on each side—that is, two-thirds of 1 per cent in all—on principal staple commodities, such as wheat, oil seeds, raw cotton, and raw wool, and on special articles from 1 to 2 per cent. Cotton-oil brokerages are one-half of 1 per cent on each side for common oil, and 1 per cent on each side for table oil.

American importers have found no first-class brokers who will deal directly with them and thereby save an agent's commission. From the American point of view, it is unnecessary, aggravating, and expensive to be obliged to establish an agent on commission, who in turn must employ another agent or broker to finally secure the customer. However, this is the custom, and a Marseilles business man writes to me:

A broker who works direct with a foreign country is no longer a broker, but an agent. He is in competition with other importers, agents, or merchants, and therefore is no longer employed by them. Many brokers act as intermediaries, not only between Marseilles sellers and buyers, but also buyers in the interior of France; but their rule is to give the buyer's name. The seller forwards the goods and assumes all risks. There are brokers of all sorts, but the ones who last the longest are those who follow strictly the principles of their trade.

A frequent cause of difficulty in opening or extending trade relations in France is the American rule of requiring cash payments, although the same firms give credit in their home trade. The French custom is to give and take from ten to ninety days' time, and any departure from that rule necessarily involves more or less embarrassment.

It is quite as safe to open an account with French merchants as with merchants in the United States, by employing the proper means. Unfortunately, the business of supplying confidential commercial information is not concentrated here, as in America, in the hands of one or two concerns of recognized authority. In Marseilles, for example, there are seventeen firms engaged in this work. Several are of high standing, and for reference purposes I give their addresses, as follows: Monteil et Cie., 18 rue de la Republique; A. Lippmann,

22 rue St. Ferréol; and Wys, Muller et Cie., 2 rue Paradis. The best firms usually employ at least two agencies, and, when asking for reports, verify them by utilizing both of their correspondents. These agencies publish commercial directories, and supply special reports on demand.

ROBERT P. SKINNER,

MARSEILLES, *November 18, 1899.*

Consul.

NEW SYSTEM OF TELEGRAPHY.

An inspector of the French telegraph service was recently sent by his Government to Budapest, to witness the experiments being made with the Pollak & Virag system.

It seems that exceptional rapidity is obtained by this system, which transmits from forty to ninety thousand words in one hour.

The inventors conceived the idea of using a telephone as a receiver. The transmitter sends forth positive and negative currents in succession, which act upon a telephonic plate. The vibrations of the plate are intensified in a manner described below, and are registered before the eyes on a paper. The rapid use of the positive and negative currents economizes so much time that the words are telegraphed almost as rapidly as they are spoken.

All dispatches must first be written out in telegraphic characters, as in the Morse system. Instead of the dots and dashes of the Morse system, however, the V sign is used upright, or inverted, as follows: Λ. These characters are as easily read after a little practice as the dots and dashes. Another point of resemblance to other telegraphic machines is that the machine perforates the strip on which the characters are placed, so that the paper directly over the characters is removed. The strip, or tape, is carried over a revolving cylinder, on which press two metal brushes, one bearing on the upright V, the other on the inverted Λ, so that the brushes and the metallic roller are brought into contact each time that the characters are perforated. The positive current acts on one brush and the negative on the other, and the two currents go forth in the wire of the line.

The following is the mode of telegraphing:

The telegram is placed in the machine, the cylinder turns, and the dispatch runs unaided on the line. Upon arrival, the current enters the receiving telephone, the positive attracting the telephone plate on one side and the negative on the other. Under this double influence, the plate oscillates and vibrates, but so slightly that the oscillation can not be utilized directly, so a small metal stem or wire is attached to the center of the plate, and to this little stem is

attached a diminutive mirror lighted by a lamp. This idea is borrowed from submarine telegraphy. The luminous ray is reflected by the mirror, and the smallest deviation of this mirror brings about a great disturbance at the extremity of the ray. It can thus be imagined how the oscillation of the telephonic plate acts upon the mirror, which in its turn determines an appreciable movement at the extremity of the ray of light. This ray is projected on a rolling cylinder carrying sensitive paper, and at each oscillation of the plate the luminous pencil marks on the turning cylinder an upright V or inverted A corresponding to the positive or negative sign transmitted. It remains only to develop the sensitive paper and to read the signs and words.

The idea consists of reception by telephone and inscription by mirror, as in the Thomson system of submarine telegraphy.

The results obtained by the system, therefore, have been the transmission at a distance of 1,000 kilometers (621 miles) of eighty thousand words in one hour over two bronze wires of great conducting power. Forty thousand words, or sixteen pages of journalistic matter, have been transmitted in twenty-five minutes. This represents more than thirty hours' work of an experienced telegrapher with the Hughes machine now in use, and more than five days and five nights of consecutive labor with the Morse system.

The speed of the Pollak & Virag machine is unprecedented, but it has its disadvantages, in the opinion of the writer on the subject. He enumerates the following points: The telegram must first be changed into characters, after the manner of the Morse system; then the strips must be perforated, as in the Wheatstone system; after reception, the photographed strips must be developed and then translated into ordinary language. It is thought that this complicated manipulation may lead to many errors in transmission, and for present use in France he concludes that the Baudot machine actually employed answers all requirements.

W. P. ATWELL,
Consul.

ROUBAIX, *November 15, 1899.*

WORLD'S PRODUCTION OF GOLD AND SILVER: REPORT OF THE FRENCH MINT.

The report just issued by the director of the French mint contains some important facts on the coining of gold and silver. The production of monetary units in the mint of France has been steadily increasing for a number of years. In 1894, the number of pieces of money coined for France, her colonies, and foreign countries was

46,000,000; in 1895, 54,000,000; in 1896, 62,000,000; in 1897, 111,000,000; and in 1898, 98,000,000. The mint can double this output. Russia alone has had 82,000,000 coins struck in France since 1896. The French mint has also done work during the past two years for Indo China, Tunis, Ethiopia, Morocco, and Bolivia.

The quantity of gold produced during the last fifteen years is placed at 13,000,000,000 francs, or, in round numbers, \$2,500,000,000, of which amount the Transvaal is credited with a production of 2,000,000,000 francs (\$386,000,000). It is believed that not less than 200,000 pounds have been used in the arts. The weight of gold struck annually into coins varies between 660,000 and 1,320,000 pounds. The quantity recoined is to be added to this. But in spite of the increase in the output, a well-known economic writer declares that the war in the Transvaal will cause a scarcity of the metal in many commercial centers, the result being a great falling off in the quantity used in the arts.

The report notes a constant increase in the output of silver. The writer just quoted, in speaking of this, says:

No one can see where the masses of silver are going which continue to pour out upon the world, or where they are to be used. The old 15½ standard is now but a myth, and the price has fallen from 220 francs for 1 kilogram (\$42.46 per 2.2046 pounds) of fine silver to 100 francs (\$19.30). In the presence of such a decrease in price, one would expect a diminution in production; but the case is just the reverse. The fact that the yield steadily increases proves that prevailing rates are remunerative.

The production of silver has risen from 3,000 tons in 1888 to 6,000 tons in 1898. Of this, it is estimated that 2,250,000 pounds are absorbed in the arts and general industry, divided among countries as follows: In the United States, 580,000 pounds; in France, 330,000 pounds; the same in Germany and England; in Russia, 210,000 pounds; and in Austria-Hungary, 115,000 pounds.

It is asserted in the French economic journals that cargoes of silver go to the Orient every year, where it is in all probability hoarded in ingots, the mints of Calcutta and Bombay being closed to it. Specialists estimate the amount thus disposed of at about 2,250,000 pounds. The calculations leave 2,100,000 pounds to be accounted for.

The report has 400 pages and is the fourth of the series. It contains facsimiles of medals of recent ex-presidents of the French Republic, as well as of queens and princesses. The total number of medals sold during the year was 291,000, of which 8,124 were of gold and 186,413 of silver, the others being of copper, bronze, etc. The mint sells its medals all over the world.

JOHN C. COVERT,

LYONS, *November 4, 1899.*

Consul.

CHRYSANTHEMUM EXHIBITION IN LYONS.

At the chrysanthemum exhibition which has been in progress in this city during the last two weeks, two thousand different varieties were exhibited by fifty horticulturists in and around Lyons. A prominent exhibitor places the number of distinct varieties cultivated in France at from eight to ten thousand. They are kept in large houses open on all sides, but roofed to prevent damage from rain. They flower in November in great variety of form of petal. It is said here to be extremely difficult to produce two different shades of exactly the same form; therefore, the exhibition is exceedingly rich in variety, leaves of tubular shape, flat, pointed, rounded at the end, curved in and down at the sides, with ascending and descending points, undulating, etc., being shown. Some plants were over 3 feet high, bearing but three large flowers. One plant bore fifty blossoms.

Every horticulturist in and around Lyons has now at least one thousand to one thousand five hundred different varieties of chrysanthemums. They are sold as house ornaments, and are very largely used in decorating graves. Many thousands of them are sold on All Saints' Day and the Day of the Dead, which fall on the 1st and 2d of November.

In the prospectus to this exhibition it is stated that—

The cultivation of this flower in Europe and America results in the production of hundreds of new varieties annually, many of which mark absolute progress over former years. It is treated as a yearly autumnal plant, cultivated by the use of divers varieties of fertilizers and different degrees of artificial heat. There is now an almost unlimited number of fertilizers, which are indispensable to the successful cultivation of this flower.

JOHN C. COVERT,
Consul.

LYONS, *November 23, 1899.*

A NEW ELECTROLYTIC PROCESS OF MANUFACTURING CHEMICALS.*

For some months past, there has been an increasing activity in the chemical trade of this district—the largest and most important of its kind in Great Britain—and quite recently an added impetus has been given by the establishment of works using a new electrolytic process. Up to a few years ago, the chemical trade of this district was exceptionally prosperous; but now it has to meet German

* See CONSULAR REPORTS No. 216 (September, 1898), p. 35.

competition, and since the going into active operation of the present tariff, the exportations to the United States have tremendously decreased. During the fiscal year ended June 30, 1893, there were exported to the United States from this district alone chemicals to the value of \$9,507,269. During the fiscal year ended June 30, 1899, the value was only \$1,982,536. The trade appears to recognize that it can never recover the American market—at least not to the extent heretofore existing. The endeavor is to create new markets and to meet competition by more economical methods of manufacture.

There has just been started at Farnworth, near Liverpool, a new process of separating chlorine and sodium by the direct decomposition of salt by electrolysis, without the introduction of any other ingredient. It is called the Hargreaves-Bird process. The Liverpool Post gives the following explanation of the method:

Salt is submitted to a suitable current of electricity, and both the substances are produced unmixed and pure. The salt used is in its cheapest form, being that of brine pumped up from its native bed, the salt of which—delivered into the actual apparatus of the factory—costs no more than about 3d. (6 cents) per ton, as against 7s. (\$1.70), the usual price for the rough salt used in the older alkali works. The apparatus, or cell, in which this is effected is a narrow tank, the walls of which are porous. Brine is pumped into it, and on the passage of electricity a solution of soda flows slowly down from the outside of these wet walls, yielding at once soda crystals; while the chlorine in like automatic manner passes away for the production of bleaching powder, chlorate of potash, or such other chlorine compounds as may be required. No raging furnace, no sulphur kilns, nor the noxious fumes rising from such are present. No waste materials are produced, unless as such be reckoned the ashes from under the steam boilers which produce the motive power for the generation of the electric current. Even the smoke from the boiler fires and the waste steam from the engine are used in carbonating and dissolving the soda thus formed. In the actual production scarcely any hand labor is required. All moves on in silent regularity, and it is only in the necessary handling and packing up of the materials produced that labor comes in.

One distinction of the cell is the peculiar diaphragm used. It is a sheet of asbestos composition, nonporous in the ordinary sense of the term, but when forming the walls of the cell, the contents of which are electrically excited, it allows molecules of sodium hydroxide to pass, but very little sodium chloride.

It is claimed that the above process is much more economical and simple than the former, including the rival electrolytic methods. It is stated that one difference between the Hargreaves-Bird process and the Kastner-Keller process (which has been in use in this district for some time) is that mercury is used in the latter process, but not in the former. Large sums of money have been spent in experiments with different electrolytic methods with varying success, and it is too early yet to say whether the new process will meet expectations. Speaking generally, however, the chemical trade of this district is now in a flourishing condition, and orders during the last month have been exceptionally large—mostly, however, for

home consumption. Still, trade is not as good as it was ten years ago. Since the great decrease in shipments to the United States, continental orders have largely increased, in spite of German competition. Most of the new orders have been from Germany, Russia, and France. Present prospects are good.

The salt trade is naturally closely allied with the chemical trade. Strange to say, however, the salt trade has not followed the chemical trade in a resumption of comparative prosperity. For months past, attempts have been made to form a combination of all the salt companies of Great Britain, most of them being in this neighborhood, on the Cheshire side of the Mersey. The combination was effected yesterday at a meeting of the trade in Liverpool, and the announcement is officially made that there will be an advance in prices from the present date. It is not proposed to consolidate the many individual companies into one gigantic "trust," to be operated by one executive, with a "pooling" of the profits and losses; but the arrangement is to form an agreement to regulate and limit the output of each concern and to keep prices up to a certain point, each company, however, to retain its own separate organization, both as to management and profits and losses.

JAMES BOYLE,

LIVERPOOL, *December 7, 1899.*

Consul.

TREATMENT OF DISEASES BY LIGHT.

Minister Swenson sends from Copenhagen, December 2, 1899, a letter to a Minnesota physician* in reply to inquiries as to the treatment of certain diseases by concentrated light rays. The letter reads:

Dr. Finsen's Light Institute was founded in 1896, for the purpose, as expressed in the articles of incorporation, of making and encouraging investigations regarding the effects of light on the living organisms, especially with the view of utilizing light rays in the field of practical medicine.

The corporation numbers among its members men of eminence and recognized authority in the medical profession, such as the professors of the University of Copenhagen in pathological anatomy, anatomy, and common pathology; and the superintendents of the leading hospitals in Copenhagen.

The institute has gained the confidence and aroused the interest of the public to such an extent that it now receives State as well as municipal aid in the way of appropriations. Its success and growth have been phenomenal. Altogether, some three hundred and fifty cases of lupus vulgaris have been treated, in all of which satisfactory results have been obtained. A large number of cases have been treated experimentally for other diseases of the skin, among them erysipelas and alopecia areata. Scarlet fever is to be experimented with. In an interview which I had with

* To whom Advance Sheets have been sent.

Dr. Finsen a few days ago, he told me that the light treatment as now perfected is so effective that there is reason to believe that every case of lupus vulgaris can be cured by means of it. Dr. Finsen's successful treatment of smallpox by means of red light is also very interesting and ought to be widely known.

Both sunlight and electric light can be used for medical purposes. Owing to its latitude, Denmark is not favorably situated for using sunlight; hence the institute makes nearly exclusive use of electric light. The arc lights used are each of 4,000 candlepower (ordinary street arc lights are of from 2,000 to 4,000 candlepower). Earlier experiments with this method of treatment have failed because the light used has not been powerful enough.

Dr. Finsen is also experimenting with photo-chemical baths to ascertain how far light is instrumental in supplying the skin with blood. He says that the red color of the exposed parts of the skin is caused principally by light. Heat seems to hinder, and cold to further it.

PRACTICE OF DENTISTRY IN BELGIUM.

As written inquiries are frequently received at this consulate from persons in the United States relative to the practice of dentistry in Belgium and the laws regulating such practice, I transmit herewith translations of new regulations dated, respectively, April 26 and August 14, 1899, which will no doubt be of interest to the dental fraternity of the United States.

GEO. W. ROOSEVELT,

BRUSSELS, *November 18, 1899.*

Consul.

ORDER OF APRIL 24, 1899.

ARTICLE 1. The stipulations of Littera B of article 2 of the royal order of December 30, 1884, relative to the term of probation required of persons presenting themselves for examination for dentist, is replaced by the obligation for such persons to have received a diploma in medicine, confirmed according to the law of April 10, 1890, modified by that of July 3, 1891, on the collation of academic degrees.

ART. 2. The present order is not applicable to persons presenting themselves for examination for dentist whose inscription in probation has been received by the medical commission anterior to the date of this day.

ORDER OF AUGUST 14, 1899.

ARTICLE 1. The programme for examination for dentist, approved by royal order of the 30th of December, 1884, is replaced for persons graduated in medicine by the programme annexed to the present order.

ART. 2. Article 3, of the said order of December 30, 1884, is replaced as concerns the examinations of the above-mentioned medical graduates by the following stipulations:

For persons graduated in dentistry having also diplomas as doctors of medicine, the examinations are oral and consist of theoretic and practical examinations.

The theoretic examination occupies forty-four minutes. It will embrace pathology, hygiene, and medical matter within the limits of the programme.

The practical examination will occupy two hours. It will embrace two dental extractions from a dead subject, two clinical examinations of persons suffering from dentary trouble, and a prosthesis work.

PROGRAMME FOR EXAMINATION FOR DENTIST FOR PERSONS GRADUATED IN MEDICINE.

A.—Pathology.

(1) Elements of general pathology and pathologic anatomy, especially considered from a dental point of view.

(2) Elements of internal pathology: (a) general; (b) special, the mouth—diseases of the mouth and tongue, dentition accidents, differential diagnostic between purely dental affections and those dependent on diabetes, syphilis, etc., "contrindications" of treatment.

(3) Elements of external pathology: (a) general; (b) special, the mouth—luxations, fractures, tumors, and necrosis of the jawbone; tumors of the soft part of the mouth, tumors, cysts, affection of the gums, disease of the teeth, dislocations, fractures, caries, "pulpites," periostitis, osteo-periostitis.

B.—Hygiene and medical matter.

(1) Medicaments from a dental point of view, their effects, doses, accidents which they may provoke.

(2) Antiseptics: their effects.

(3) Anæsthetics, general and local; their effects, their "contrindications."

(4) Hygiene of the mouth, opiates, powders and elixirs, dentifrice tooth brushes.

C.—Special therapeutics and dental surgery.

I.—SPECIAL THERAPEUTICS.

(1) Treatment and filling teeth.

(2) Dental caries; treatment, filling, cements, gold filling, etc.

(3) Periostitis, osteo-periostitis; treatment.

(4) Malformations; treatment, appliance for straightening.

(5) Extraction.

(6) Instruments, description, their advantages and disadvantages.

II.—SURGERY.

(1) Preparation of the mouth, impressions, molding, molding after another mold, articulation, metallic models, stamping, metals, gold, platina.

(2) Retention of appliances, metallic clasps, suction, adjustment of simple teeth, gum, tube, pivot, etc.; solder, natural teeth.

(3) Dental orthoëpy; restoration of cheek and facial muscles; straightening teeth, jawbones, and nose; obturator, appliances for fracture of jawbone.

(4) Plastic substances—vulcanite, celluloid, etc.

(5) Appliances, metallo-plastic, ceramo-plastic, etc.

MANUAL TRAINING IN GERMANY.

On the 1st of October, twenty-four years had elapsed since the movement having for its object the manual training of boys was inaugurated in Germany. In this space of time the idea has certainly been disseminated largely in this Empire, and over 2,000 teachers have given their cooperation to the movement; nevertheless, both the internal and the external conditions connected with this new branch of tuition leave much to be desired. The original training in home industries and home occupation has almost entirely disappeared; it is carried on at present only in a few places in Holstein and in 17 institutes for the blind. Most of the other educational establishments in Germany, including 18 orphanages and 46 deaf and dumb institutes, have already introduced manual training into their curriculum. But the endeavor to prepare the pupils in the schools direct for the eventual handicraft has obtained importance in only two of Germany's institutions of learning. The majority of the German home-industry schools only deal pedagogically with the subject.

There exist at present in Germany, distributed in 605 places, 861 schools and institutes wherein manual training is carried on in 1,514 workshops. Of this number, 836 schools and institutes conduct the training on a pedagogical basis. Prussia has 570 manual-training schools, spread over 435 places and distributed among 596 workshops. Industrial centers take the lead, as follows: Prussia, Upper Silesia, the Rhenish Province, and the Kingdom of Saxony.

The 1,514 pupils' workshops comprise 286 independent manual-training schools and 238 public schools, of which 16 are auxiliary schools where the work is obligatory, 17 middle-class schools, 41 high schools—made up of 8 gymnasiums, 6 technical gymnasiums, 12 technical and technical high schools, and 15 boarding schools—7 preparatory institutes, 26 teachers' seminaries, and 93 boys' asylums, while the remainder is made up of various kinds of private educational establishments. The organization of the handicraft tuition in the individual schools and institutes is varied in character. Sixty-nine institutes have adopted the whole curriculum as recommended by the German Association for the Dissemination of Manual Skill, while 16 dispense with the preparatory work; of the rest, 177 schools and institutes confine themselves to three branches, 261 limit themselves to two, and the remainder to one branch only. Five hundred and thirty-five workshops are devoted to wood carving, 527 to working in cardboard, and 336 to the carpenter's bench;

of these, 68 are closely connected with wood carving, 77 with preparatory roughing-out work, 35 with metal work, 28 with country timbering, 11 with turnery, and 11 with modeling in clay.

Pedagogical manual tuition has branched out in three directions: the practical formal method which regards handicraft as a means to general culture; the direction advocated by those who aim at the so-called school-manual dexterity; and the system which would make the manual training serve as the basis of individual branches of teaching and utilize these in order to influence the method of instruction in schools. The first two are becoming more and more amalgamated. In the third direction, Professor Kumpa, at Darmstadt, School Inspector Scherer, at Worms, and Rector Brückmann, at Königsberg, Prussia, are at present engaged in making thorough experiments in public schools.

The participation of German teachers in the efforts of the German association is steadily increasing. Over 2,200 German teachers have up to now been taught to become instructors in manual training. Of these, 950 were taught in Leipzig and 1,250 acquired training in thirty-three places in other parts of Germany.

GEO. SAWTER,

GLAUCHAU, *November 20, 1899.*

Consul.

MARRIAGES OF AMERICANS IN GERMANY.

On the 1st of January, 1900, the new civil code (*Bürgerliches Gesetzbuch*) comes into operation in Germany. Its laws concerning marriages of foreigners are particularly interesting, and it may not be out of place to publish them in the *CONSULAR REPORTS*, since it very frequently happens that citizens of the United States (mostly naturalized) claim the assistance of United States consular officers in Germany for the purpose of the solemnization of a projected marriage. The Consular Regulations forbid the giving of certificates relative to marriage laws in the United States, and these citizens frequently meet with insurmountable difficulties. These could, however, be avoided, if Americans who intend to marry in Germany were to procure the papers required by the authorities here before leaving the United States. The new law requires:

(1) Proof that the applicant is a citizen of the United States (certificate of naturalization, passport, certificate of legation, or consular certificate).

(2) A certificate by the proper authorities of his native or home State to the effect that the authorities know of no just cause and

impediment why the marriage should not take place. This certificate must be verified by the German ambassador or a German consul in the United States.

(3) A certificate of birth, which must be verified by the German ambassador or a German consul in the United States.

(4) Should there be any consanguinity or affinity between the applicant and his intended wife, proofs must be furnished that in the applicant's home State such consanguinity or affinity forms no impediment to the marriage.

(5) If the applicant has been married before, the decree relating to the dissolution of the marriage must be produced, after having been verified by a consular officer.

It is well to procure all these documents, for in this way delays and other annoyances may be avoided.

During the last year, a naturalized United States citizen from South Dakota, who wanted to marry in this United States consular district and take to his new home a distant relative, had to wait fully four months before the documents required by the Bavarian authorities could be procured.

LOUIS STERN,
Commercial Agent.

BAMBERG, *November 16, 1899.*

TRADE IN SOUTH AFRICA.

The increase in goods shipped from the United States to British and Portuguese South Africa for the year ended June 30, 1899, was £359,880 (\$1,748,916.80). The British and South African Export Gazette gives the following:

Bars or rails for railways show the greatest increase, the imports amounting to £161,380 (\$785,932.60), against only £13,141 (\$63,996.67) in the previous year. Agricultural implements showed an augmentation of £24,011 (\$116,933.57); builders' hardware, £6,208 (\$30,232.96); cycles and parts, £713 (\$3,472.31); and sewing machines, £298 (\$1,451.26). In food stuffs, canned beef was imported to the value of £98,284 (\$478,643.08), an excess over the previous year of £16,053 (\$78,178.11); lard, £49,106 (\$239,146.22), against £29,943 (\$145,422.41) of the year before. There was also improvement in the trade in bacon, hams, pork, fruit, nuts, sugar, and molasses. Mineral oil was shipped to the value of £267,638 (\$1,303,397.06), compared with £229,707 (\$1,118,673.09) for 1898; paraffin, £7,329 (\$28,692), an increase of £1,249 (\$6,082.63); and vegetable oil, £55,698 (\$271,249.26), against £47,146 (\$229,601.02) for 1898. There were also heavier shipments of resin, tar, etc., and spirits of turpentine. Timber and unwrought wood were imported in increased amount by £66,547 (\$325,103.89); unmanufactured tobacco, by £14,307 (\$69,675.09); manufactured tobacco, by £20,663 (\$100,628.84). The importation of leather and its manufactures increased from £31,267 (\$152,290.29) to £32,709 (\$159,292.83), and there was also an increase in books, maps, and engravings, clocks, watches, and seeds. Among the decreases, that of £616,556 (\$3,002,140.72) in corn (including

wheat) was especially noticeable; other food stuffs figuring for diminished exports being salted and pickled beef, butter, and flour. There was a decline of £3,478 (\$16,937.86) in scientific instruments (including telegraph and telephone instruments and materials), and £969 (\$4,719.03) in typewriting machines. Carriages, cars, etc., showed a decrease of £8,795 (\$42,831.65), and furniture £2,536 (\$12,350.52). There was also a falling off in cotton manufactures of £3,907 (\$19,027.09), and a decreased importation of horses.

The imports into Cape Colony for the nine months ended September 30, 1899, exclusive of specie, were:

Description.	1898.	1899.
Merchandise	\$58,595,558.83	\$57,632,290.29
Exports:		
Colonial products.....	15,341,792.11	15,793,140.52
Diamonds.....	17,080,762.89	18,525,057.89
Gold (unrefined).....	55,057,926.39	67,170,085.24
Rebate trade:		
South African Republic.....	11,514,757.05	12,264,655.50
Other territory.....	1,999,221.47	1,979,166.62
Total	13,513,978.52	14,243,822.12

The Financial Record says:

The news of the establishment of a new line of German steamships to trade along the coast of South Africa will further accentuate the agitation against the "shipping ring." The new line is said to have a subvention of £600,000 (\$2,919,900) from the German treasury, and, if this be a fact, its competitive force will be largely strengthened, as it will be able to run vastly cheaper rates than even the present German lines do. Hence the dissatisfaction prevalent in South Africa against the ring will possibly result in a loss of custom to the latter, and in a serious impairment of British trade.

J. G. STOWE,
Consul-General.

CAPE TOWN, October 28, 1899.

COMMERCIAL CONDITIONS IN SOUTH AFRICA.

The exodus of Uitlanders from the South African Republic and Orange Free State has, I believe, been unprecedented in history. Many of these people—the mining population, the bone and sinew of the country—have scattered over the world. Numbers of them, too poor to get out of the country, are subjects of charity in the cities of Cape Colony and Natal and have to be fed. Some have funds for a few days or weeks, but will in time have to be supported by the public, and this in a country that can not, or does not, produce the food stuffs for its own people. The English army is fed with supplies from other countries, and, while much of these may have originally come from the United States, they reach here via England. The customs duties and railroad and telegraph revenues

have fallen off. As the railroads and telegraphs are owned by the Government, a very large source of Government support is lost, to say nothing of the employees thrown out of work.

Johannesburg, in the Transvaal, and Bloemfontein, in the Free State, are, to all intents and purposes, deserted cities. Johannesburg, the largest commercial center in South Africa, has, so far as trade is concerned, ceased to exist. This once busy, bustling city, producing monthly over 15 tons of gold and yearly \$60,000,000 worth, is silent. Up to this time, goods have reached the Transvaal via Delagoa Bay, but it is not supposed that they will long be permitted to enter. The two Republics must then live on their own resources. Their crops are ready for the sickle, but can not be cut, as the men are off to the war. Prices are so high that the trade papers refrain from publishing the usual column of "market prices." Large quantities of gold en route to seaports in this colony for shipment to England have been taken by the Boers. Representatives here of export commission houses of the United States are constantly booking and cabling large orders, particularly of food stuffs, but word comes from the canners of meat and fish, makers of flour, corn meal, etc., that they have about all they can do to supply the home demand and are many weeks or months behind orders.

J. G. STOWE,
Consul-General.

CAPE TOWN, *November 4, 1899.*

Under date of November 21, 1899, Mr. Stowe adds:

From United States papers that reach me, I gather that our manufacturers intend to withhold shipments to this country. The fear is expressed that the war will disrupt business for a time. War does disrupt business, but does not always curtail export trade or interrupt its progress. I agree that "goods which are sent to South Africa from the United States are handled in many cases by English jobbers, who would, of necessity, be compelled to break off business relations with the *natives* [the italics are mine] in case of hostilities;" and that presents the question, Why should English jobbers take the agency for the whole of South Africa in any article? I regret to learn, and correctly too, that several bills of goods sold by resident agents to merchants here have been held back, both on account of the war and the uncertainty of payment. I think this is poor policy. The credit of the leading merchants in the seaports of this colony can not be materially affected by the war, and in several cases of which I am cognizant the goods which were sold and held back in the United States were sure of payment. The situation

is so well set forth in an article from the British and South African Export Gazette that I here insert it:

SOUTH AFRICA'S COMMERCIAL CREDIT.

It is gratifying to note—the war notwithstanding—that there is no present need to urge a policy of forbearance towards South African firms on the part of creditors. It is generally and rightfully recognized that the present situation is altogether abnormal and produced by causes essentially transitory. It is not a case where consideration may only delay, but not prevent, a final collapse, but the contrary. As a fact, conditions for prosperous trade are excellent; but political circumstances in South Africa stand in the way of their immediate utilization. The essence of the present situation is patience. When the paralysis of trade is at an end, the vast sums of money locked up in bank coffers in South Africa, as well as those in this country which are ready to be launched so soon as reasonable securities are visible, will lubricate the wheels of a rebound of trade which will quickly change the present complexion of things. South Africa has before now successfully tided over worse times than these, and there is no reason to suppose that she will not be able to do so again.

I make the statement in all candor that the war, even with all its horrors, will not cause imports from the United States to fall off. The thousands of mules, the millions of pounds of flour, wheat, corn, corn meal, sump, and canned meats and fish brought into this country from England for war purposes, which previously had been shipped from the United States to England, added to the direct shipments from the United States to this country, present a total that is extraordinary.

What the shipments of United States products from England amount to we shall never know, as they enter duty free and no record is kept of them at the custom-houses.

It must, however, be kept in mind that in some lines of goods from the United States, which have in previous years found a valuable and ready market, the decrease in imports will be decided. The total trade from the United States is maintained by the increase in food stuffs.

RAILWAYS IN AFRICA.

Consul Skinner sends the following from Marseilles, November 2, 1899:

The competition in Africa elicits a strongly supported demand in France for the more rapid building of railways, and particularly for the construction of a trans-Saharan line. This project is designed as a sort of offset to the British "Cairo to the Cape" enterprise, and the one is not much more advanced than the other. The Marseilles Chamber of Commerce, in a report to the Minister of Commerce,

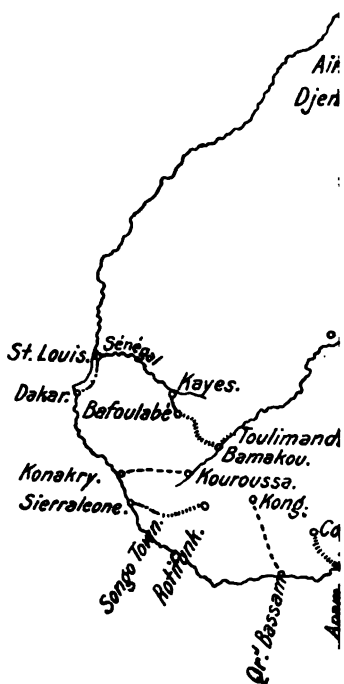
says: "The question whether the railways will pay is not to be considered." It declares that France, having laid hands upon points 1,200 and 1,800 miles from the sea, must establish a connection or lose the fruit of its labor. While reiterating that the doubtful element of future profit must not hinder actual work, the intimation is held out that a profitable traffic can be built up. The Belgian Kongo region is cited as an example. The railway from Stanley Pool to the sea, 400 kilometers (249 miles) long, was fully completed in May, 1898, and 100 kilometers (62 miles) were in operation as early as 1896. The total capital and bonds amount to 65,000,000 francs (\$12,545,000) and the present monthly receipts are 1,000,000 francs (\$193,000). The commercial movement has increased from 17,650,000 francs (\$3,406,450) in this colony in 1893 to 50,500,000 francs (\$9,746,500) in 1898. The principal business is in caoutchouc, a product that is firm in price and even advancing, while the general trend of prices of other products is downward. It is contended that the French colonies in Africa are veritable mines of rubber, and need only means of transportation to bring about highly prosperous conditions.

The map accompanying this report clearly shows the extent of railway development in Africa.* The interest in railway building can not fail to impress the American observer as pointing to a long continuance in the demand for iron and steel, and serves also as a lesson upon the best method of settling our newly acquired spheres of influence. What has been already done, and what is projected in Africa, may be gleaned from the following:

District.	Railway completed.		Building, surveyed, and definitely projected.	
	<i>Kilometers.</i>	<i>Miles.</i>	<i>Kilometers.</i>	<i>Miles.</i>
Tunis-Algeria	3,800	2,361	1,110	690
Senegal-Sudan	444	276	360	224
French Guinea.....			550	342
British Guinea.....	57	35	263	163
Ivory Coast.....			450	280
Gold Coast.....	68	42	132	82
Dahomey			800	497
Lagos	70	43	230	143
Belgian Kongo.....	400	249	2,000	1,243
Portuguese Kongo.....	355	221		
German West Africa.....	116	72	584	363
Cape Colony.....	7,000	4,350	(†)	
Uganda	464	288	1,036	644
Madagascar			400	249
Total	12,774	7,937	7,945	4,920

* NOTE BY BUREAU OF FOREIGN COMMERCE.—Besides the lines indicated on the map, the following have been discussed: From Suakin, on the Red Sea, to Berber; from Lake Tchad to Fashoda; from Loanda, in Portuguese West Africa, to Lake Tanganyika; and from Walfish Bay across German Southwest Africa to Buluwayo.

† Cairo to Cape project not included in this table.



RAILROAD MAP OF AFRICA

- Lines complete or
- Lines studied offh
or upon the point
- Lines in construc
- Lines suggested by

In another portion of its report to the Minister of Commerce, the Marseilles Chamber of Commerce says:

This year we have to mention profound modifications in the power and expansion of the five great nations which direct the world—that is, England, Russia, the United States of America, Germany, and France. These five seek everywhere to make their influence supreme. The present year will be marked by the entrance of the United States as a colonial power which wishes its part in the division of the world. France pursues its African march from the Atlantic to the Red Sea and rubs against the British project of connecting Cairo and the Cape. The great fact which holds attention is the effort being made to exploit these possessions without delay by the construction of railways.

RAILWAYS IN JAPAN.

Consul-General Gowey sends from Yokohama, October 9, 1899, a clipping from the Japan Times, giving résumé of the last annual report of the imperial Japanese railway bureau, as follows:

The annual report of the imperial railway bureau for the fiscal year ended March 31, 1899, just published, shows that the progress of railway work and business during the period reviewed was, on the whole, eminently satisfactory. The addition which was made during the year to the mileage of the lines open for traffic was 471 miles and 60 chains, which shows an increase of 30 miles over the record of the preceding period. The entire mileage on State and private lines open for traffic at the end of the year under review was 3,420 miles and 50 chains, and adding thereto the lines under construction and those for which charter had been given, the total mileage stood at the respectable figure of 5,810 miles. The following table will show at a glance the steady progress made in the work of railway construction during the past twenty-seven years:

Open mileage at end of fiscal years.

Fiscal year.	State lines.	Private lines.	Total.
	Miles.	Miles.	Miles.
1868-69.....	768	2,652	3,420
1867-68.....	661	2,287	2,948
1866-67.....	631	1,875	2,507
1865-66.....	593	1,697	2,290
1864-65.....	580	1,537	2,118
1863-64.....	557	1,381	1,938
1862-63.....	550	1,320	1,870
1861-62.....	550	1,165	1,716
1860-61.....	550	848	1,399
1859-60.....	550	585	1,136
1858-59.....	505	406	912
1857-58.....	300	293	593
1856-57.....	264	165	430
1855-56.....	223	134	358
1854-55.....	181	80	262
1853-54.....	181	63	244
1852-53.....	170	.....	170
1851-52.....	122	.....	122

Open mileage at end of fiscal years—Continued.

Fiscal year.	State lines.	Private lines.	Total.
	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>
1880-81.....	98	.....	98
1879-80.....	73	.....	73
1878-79.....	65	.....	65
1877-78.....	65	.....	65
1876-77.....	65	.....	65
1875-76.....	38	.....	38
1874-75.....	38	.....	38
1873-74.....	18	.....	18
1872-73.....	18	.....	18

NOTE.—Figures for some years in this table do not sum up, because for the sake of simplicity we have omitted those for chains.

At the end of March, 1899, the number of the railway companies incorporated under formal charters was 58, with a total capital of 238,775,000 yen (\$118,909,950)—paid up, 158,181,389 yen (\$78,774,332)—and a mileage of 3,737 miles (open, 2,652 miles). Besides these, 26 new companies were formed under provisional charters during the period under review, with a total capital of 43,535,000 yen (\$21,680,430) and a mileage of 809 miles. Of the companies under formal charters, those which were actually doing business numbered 42, the rest being engaged in the work of construction. Out of these 42 companies, only 5 had more than 100 miles open for traffic. They were as follows:

Company.	Open mileage.	Paid-up capital.	
	<i>Miles.</i>	<i>Yen.</i>	
Nippon.....	857	44,700,000	\$22,260,600
Kyushu.....	315	24,638,014	12,269,731
San-yo.....	276	15,840,657	7,888,647
Hokkaido Tanko.....	207	6,680,000	3,326,640
Kansai.....	147	10,700,000	5,328,600

The following table shows the average cost of construction per mile on State and private lines in the last two fiscal years:

Fiscal year.	State lines.		Private lines.		Total average.	
	<i>Yen.</i>		<i>Yen.</i>		<i>Yen.</i>	
1897-98.....	69,857	\$34,789	49,974	\$24,887	54,472	\$27,127
1898-99.....	79,029	39,356	57,226	28,444	62,007	30,879
Increase.....	9,172	4,567	7,252	3,557	7,535	3,752

It is scarcely necessary to observe that the increase in the cost of construction shown in the above table is the result of the general rise in price of commodities and labor.

The total rolling stock on the State and private lines at the end of the year under review comprised 1,103 locomotive engines, 3,811 passenger cars, and 14,088 freight cars. Compared with the corresponding date of the previous year, there was an increase of 209 locomotive engines, 911 passenger cars, and 2,663 freight cars. As to the ratio of the rolling stock to the open mileage, there were for every 100 miles 32

locomotive engines, and 112 passenger and 413 freight cars. The above-mentioned total of the passenger cars includes 3 imperial carriages and 582 accessory cars, such as brake vans, luggage, and postal cars. Excluding these, the remaining passenger cars had a total capacity sufficient to accommodate 5,657 first-class, 15,660 second-class, and 123,822 third-class passengers, or 145,139 passengers in all, which shows an increase of 30,084 seats compared with the end of the preceding year. The total capacity of the freight cars was 94,350 tons, or an increase of 15,903 tons over the preceding period. The total mileage run by locomotive engines during the year under review was 24,917,429 miles; by trains, 22,977,400 miles; and by passenger and freight cars, 310,667,984 miles; showing, respectively, an increase of 21, 22, and 20 per cent as compared with the preceding period. The quantity of fuel consumed was 439,791 tons of coal and 14,339 koku (7,115 bushels) of liquid fuel.

The traffic returns for the last fiscal year show that the total number of passengers carried on the State and private lines was 99,061,889, while the goods transported amounted to 9,916,126 tons, besides luggage and parcels which aggregated 36,705 tons. The aggregate receipts amounted to 30,832,084 yen (\$15,354,378), made up of 19,651,789 yen (\$9,786,591) from passengers, 10,309,820 yen (\$5,134,290) from freight, 588,042 yen (\$292,845) from luggage, 276,508 yen (\$137,701) from postal matters, and 5,925 yen (\$2,951) from miscellaneous articles. Compared with the preceding year, there was an increase of 16 per cent in passengers, 14 per cent in freight, and 18 per cent in luggage and parcels carried. But when computed according to mileage, there was a decrease of 2.4 per cent in passengers and 3.6 per cent in freight.

Coming finally to the chapter dealing with profit and loss accounts, we find that the gross income on the State and private lines for the year is put at 31,700,676 yen (\$15,786,937), which is considerably larger than the amount quoted in the foregoing paragraph. We presume that the difference is covered by miscellaneous receipts. Against this income, the working expenditure amounted to 17,765,544 yen (\$8,847,241), so that there was an aggregate profit of 13,935,132 yen (\$6,939,676). Compared with the preceding year, there was an increase of 5,173,129 yen (\$2,576,218) in income and 5,401,448 yen (\$2,689,921) in expenditure, the result of which was a decrease of 228,319 yen (\$113,703) in the profits. The above-mentioned profits for the last fiscal year was at the rate of 6.62 yen (\$3.30) per 100 yen (\$49.80) of the cost of construction of the open mileage, showing a decrease of 2.21 yen (\$1.10), when compared with the result for the previous period.

JAPANESE GOLD STANDARD AND AMERICAN TRADE.

Consul Lyon, of Hiogo, under date of October 9, 1899, sends an extract from the *Kobé Herald*, an English journal published at that port, setting forth the view taken by the Japanese consul in New York in regard to the effect of Japan's gold standard on trade with America.

The extract reads:

The following is the substance of replies received by the Nagoya Chamber of Commerce the other day from the Japanese consul in New York, of whom the local chamber made inquiries some time ago with regard to the business conditions

prevailing between New York and Japan since the adoption of the gold monetary system in this country:

Inquiry from the chamber.—"Has there been any feeling on the New York market against our country on account of its adoption of the gold standard?"

Answer.—"The export trade from New York to Japan is showing signs of development year after year; and these signs were especially marked last year. Though such advance of trade is not wholly attributable to the adoption of the gold system at home, yet it is noticeable that the export merchants at New York are greatly benefited in the transaction of business, for there has been no serious change on one side or the other since Japan adopted the gold system."

Inquiry.—"Did the adoption of the gold standard in Japan tell disadvantageously upon export business from Japan to New York?"

Answer.—"No; not at all. Owing to the stoppage of fluctuation in exchange, all the principal articles of merchandise, such as raw silk, tea, etc., entering New York from Japan are maintaining a most advantageous position in the field of competition against the products coming from China."

CHINESE TRADE IN 1899.

The Department has received from Consul-General Goodnow, of Shanghai, a printed résumé of the customs returns for the quarter ended June 30, 1899. The article notes an increase in revenue collected by the customs during the quarter.

The number of regular treaty ports has risen to twenty-seven, and with the exception of Soochow, Amoy, and Kumchuk, they are unanimous in showing an improvement over 1898. At Hankau, Wuhu, and Shanghai, the improvement is striking. The total for the same quarter of the last three years has been:

Halkwan taels.

1897.....	5, 975, 115=	\$4, 415, 610
1898.....	5, 330, 880=	3, 699, 631
1899.....	7, 001, 548=	5, 044, 615

This, says the article, is the largest collection in the decade. It includes two ports which appear for the first time—Nankin and Santuao—but they only give 13,000 taels (\$9,367) between them.

The import of cotton goods showed a decline in gray shirtings, T cloths, and drills and jeans of all kinds and an advance in white shirtings, sheetings of all kinds, and fancy goods. There was a marked advance in cotton yarn, English excepted, the comparative imports for the past three years being:

Description.	1899.		1898.		1897.	
	<i>Piculs.</i>	<i>Pounds.</i>	<i>Piculs.</i>	<i>Pounds.</i>	<i>Piculs.</i>	<i>Pounds.</i>
English	5,244	699,200	12,306	1,640,800	9,953	1,327,066
Indian.....	271,254	36,167,200	178,701	28,826,800	145,301	19,373,466
Japanese	100,749	13,433,200	54,104	7,213,866	45,237	6,031,600

Except in the case of cloths of all kinds, the import of woollens showed a large advance. In metals, there was a decline in railroad and bar iron, tin, tin plates, and quicksilver, and an improvement in old iron, lead, and steel. Foreign sundries showed an increase all round, almost the only exception being refined sugar. The comparative import of kerosene oil was:

Description.	1899.	1898.	1897.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
American	12,003,610	10,120,170	8,514,790
Russian	5,071,600	1,400,000	4,876,310
In bulk.....	649,680	1,129,000	1,230,650
Sumatran.....	Nil.	Nil.	1,555,510
In bulk.....	1,338,971	6,659,170	Nil.

COTTON GOODS IN SHANGHAI.

I give below comparative returns of the import of cotton goods for the quarters ended September 30, 1895-1899, as reported by the imperial maritime customs:

Imports of cotton goods into Shanghai.

Articles.	Quarter ended September 30—				
	1895.	1896.	1897.	1898.	1899.
Drills:	<i>Pieces.</i>	<i>Pieces.</i>	<i>Pieces.</i>	<i>Pieces.</i>	<i>Pieces.</i>
American	236,064	433,001	566,160	548,180	469,645
English	72,395	66,050	29,690	24,221	54,168
Dutch	30,255	33,185	12,870	4,005	1,680
Jeans:					
American	11,165	20,330	16,280	39,220	47,200
English	37,641	36,150	50,079	28,120	17,751
Dutch	11,645	7,740	10,110	5,640	9,070
Sheetings:					
American	380,125	510,915	711,065	774,498	1,016,755
English	101,058	132,253	106,891	101,706	224,200
Indian	30,560	34,725	15,200	2,480	5,367

SHANGHAI, October 28, 1899.

JOHN GOODNOW,
Consul-General.

PACKING GOODS FOR CHINA.

The trade in goods coming in small parcels by mail from the United States to and through this port has been rapidly increasing of late. More care, however, must be taken in packing such goods. In the last mail there was a large number of these packages sent as registered mail, and in almost every instance they were received at this office broken. Most of them were in paper boxes; some were in wooden boxes. All such were broken. Shippers must remember that mail sacks are liable to rough handling in being put into the hold of ships, and that much more care must be taken in wrapping goods for China than for points in the United States.

In this mail, I noted especially one shipment of eyeglasses, packed in a wooden box of flimsy make. The box had collapsed, the paper wrapping had broken, and the glasses were scattered through the bag, some being broken. The fault was entirely due to careless, slipshod packing.

The Chinese post will not take damaged parcels for interior points. All we can do is to send notice to the party to whom the package is directed that we hold for him a damaged package, and that he must get some friend to call for the package and forward it as best he may. All this results in loss of time and trade.

SHANGHAI, *November 17, 1899.*

JOHN GOODNOW,
Consul-General.

THE AGRICULTURAL PRODUCTS OF NORTH CHINA.

The principal provinces in northern China are Chihli and Shantung. The province of Shansi, to the west, is separated by a range of mountains from Chihli, and the climate is in some respects quite different; but there is a general similarity between the regions specially mentioned and the remainder of the northern part of the Empire. The country has an alluvial or loamy soil, and is usually capable of producing good crops when there is an adequate rainfall, which, however, not infrequently fails. At such times there is always a risk of a general famine, such as took place in the years 1877-78, when millions perished.

Perhaps the most important crop is wheat. It grows all over northern China, with but slight differences in manner of cultivation,

due to local climate. In a few districts, spring wheat is grown; but as a rule the ground is plowed for wheat in the autumn after the other crops have been housed, and as soon as there is a good fall of rain. The wheat is put in with a drill, as are almost all other crops.

The Chinese are very expert in the use of manure, which they dry in the spring and pulverize; and it is always for sale at the river markets at a price varying with the locality. This manure is brought to the fields in carts and is poured into the seed drill with the seed, so as to make a little go a great way. The practice of drilling everything is sometimes a wasteful one, as there is almost always (with their imperfect machines) a much larger quantity of seed put in the ground than can live in the limited space intended for it, and much of it has to be pulled up later by hand. If the wheat gets a good start in the autumn, it looks well all winter. It is much helped by the rains and especially by the snows, which generally occur at intervals through the winter.

Much of the land is made to yield two full crops a year, and after the wheat has been gathered in June, the land may be planted in beans or sweet potatoes, maize, or some other late crop. But it is recognized as the better plan to let the ground lie fallow until after autumn harvest, when wheat may be put in again, as the increased yield compensates for the loss of the extra crop.

The Chinese well understand the principle of rotation of crops, and for the most part are governed by it, with some conspicuous exceptions. But it is a general fact that they are indifferent to the quality of the seed planted, and though they realize that the middle of the ear yields better seed than the ends, they pay no attention to such a selection, it often being considered a fine economy to sell the round, full grain and to keep the withered and imperfect ones for planting.

The wheat usually ripens about the beginning of June, when the stalk is either pulled up by hand or the straw cut (with a small sickle not more than 4 inches in length) very near the root.

The Chinese thrashing floor is the center of incessant activity after the wheat harvest begins. The ground has been previously prepared by wetting and rolling with heavy stone rollers over straw, by which means it is made at once hard and smooth. The wheat is thrashed out by the passage of the stone roller over it, and the winnowing is generally done, not by mill—although the Chinese have such an implement without screen—but by throwing the grain and chaff into the air with shovels, by which crude process most of the chaff is eliminated—at least a sufficient amount to satisfy the Chinese demands.

It is very difficult to ascertain the product of any Chinese crop

per acre, or "mou." All measures in China, like all weights, are extremely variable. The farmer will tell you that his land yielded so many pecks, but it may be incidentally learned that the "peck" of that region is but a third as large as the one used in another district near by. Acres, bushels, pecks, pounds, etc., have no fixed value; so that comparisons are difficult. The yield of wheat may be set down as "two bags," but how much a "bag" may hold is wholly uncertain, as they are made of all sizes, to contain from 100 catties up to perhaps 150. The catty, or Chinese pound, according to treaty, is $1\frac{1}{3}$ pounds avoirdupois; but this is a merely ideal relation, hardly ever realized. For these reasons, all statistics as to the productiveness of Chinese land are to be taken with considerable allowance.

The great mass of the village population do not use white flour as an article of ordinary diet; but on feast days, during the wheat harvest itself, and during the new year's holidays there is a marked exception to this rule.

Next to wheat, probably the most important food crop is millet, of which an enormous quantity is grown everywhere. White rice does not grow in northern China. It is found in Tientsin and Peking, but not to any extent in the interior. Millet is planted as early in the spring as the rains will allow. It is drilled into the ground, worked by plowing between the rows while it is small, and later by hoeing.

The Chinese hoe is a clumsy implement. It has a surface more than 6 inches square, and its function is to cut weeds in two and to stir the soil from beneath, without to any extent removing it. The plow is always small, with but one handle, the moldboard having a very few inches of surface and being always designed for surface work only. The plows are frequently drawn by men and women. No Chinaman has the smallest conception of such a thing as deep plowing, and he would be horrified at the idea of turning all the valuable surface soil underneath. The harrow is not unlike the kind we used a hundred years ago, and the farmer often has a brush drag for a convenience. He depends upon the winter frosts, however, to do most of the work of pulverizing the lumpy soil, and in the spring it is always easy to get the ground which was plowed in the fall into shape for planting.

In Chihli Province the land tax (which is perhaps the lightest in the world) is paid in money; but in Shantung, as in the central provinces, it is paid in grain, which is required to be delivered at some convenient spot, measured, and shipped on small river boats to Peking. In Shantung, millet is used for the payment of the land tax.

What is called "tall millet" bears no relation whatever to the

grain last mentioned. It is very similar to the sorghum, or sugar cane, so extensively grown at one time in the Middle and Western States. It is planted about the same time and under the same general conditions as millet; but it grows to from 10 to 15 feet in height, and when it begins to attain its growth it everywhere hides the horizon, so as to make it difficult to find one's way about, there being not even a fence to show the boundaries between farms. It thus becomes a convenient refuge for thieves and outlaws, who can readily hide in its endless recesses and defy pursuit. The natives call it "collian." In this plant, nature has furnished one of her best gifts to the forestless plains of northern China. The blades are stripped from the stalks while green and cured for fodder. When ripe, the tops are thrashed for the grain. The stalk of the sorghum is so full of silica that it is invaluable for making hedges and for the roofs and sides of buildings. When used for the latter purpose, the stalks are covered with very thick layers of mud, and withstand the heaviest rains for a long time. When they finally rot, they can be removed, and what is left is used for fuel. Finally, after the stalks are cut and removed from the fields, the roots are pulled up and stored away for fuel, and thus every vestige of the plant is made to serve some useful purpose.

It should be understood that the mass of the Chinese people burn no wood, on account of its cost, and the use of charcoal is confined to the well-to-do. At a distance from coal mines, coal is hardly an article of commerce, except at or near the banks of rivers. All the cooking and heating of the k'ang, or stove bed, without which no Chinaman in the north can exist, is accomplished by burning the stalks of the crops and the weeds and straw he has gathered. The combination of all of these forms of fuel, however, is inadequate to do the heating and cooking required, so that the dwellings of the Chinese are never really warm after the autumn frosts have begun.

Indian corn has undoubtedly been introduced into China during the present dynasty. It never grows to a great height, and the yield is probably not a quarter as large per acre as in the United States; but it is useful to take the place of other crops in a dry year, since it can be planted much later than either kind of millet. It is now thoroughly established as one of the standard crops of northern China.

Barley is grown to some extent, but the aggregate yield is probably not large.

Oats are found in the mountain regions of Chihli, about Kalgan, and in various parts of Shansi.

In the poor soil near the mountains, one sees a great deal of buckwheat in small patches. It is an index of the state of Chinese

markets that foreigners living in northern China, where there is probably a thousand times more buckwheat grown than all the foreigners could possibly use, experience so much trouble in getting hold of it when wanted that they invariably send to California, rather than be disappointed by having their Chinese orders unfilled.

Besides the millet already mentioned, other kinds are raised, such as the glutinous millet, usually cultivated only in small patches for home consumption, because it makes a certain dumpling which is much prized. The varieties of these small grains are so numerous that it is a proverb that not even a farmer can repeat all the names.

In the many regions subject to inundations, there is a kind of upland rice which is planted when ordinary crops would be drowned out, but this belongs rather to central than to northern China.

Sesame is grown to some extent for the manufacture, by a rude process, of an oil much used in cooking. Sesame seeds are used to improve the flavoring of the ordinary wheat cakes baked in ovens or on hot stones.

Sweet potatoes are found throughout this entire region, sometimes of an excellent quality. They are perhaps the cheapest form of food accessible to the poor and are easily cultivated, being propagated from shoots set out after the rains have begun.

Tobacco is another plant which China owes to the West, although that fact has long been forgotten. It can not have been introduced more than two hundred years, but its use has become practically universal. Foreigners think it too mild, but the Chinese are attached to it. It is smoked in long pipes holding very small quantities.

The Chinese raise a great amount of beans of various kinds, the principal of which is a coarse black bean, fed to animals and used for making a crude oil, which is in great demand. The bean cake left after the oil has been extracted is an important article of commerce, especially from the port of Niuchwang, where beans occupy a large part of the cultivable land. The cake is sent to the south, where it is greatly prized as a manure for sugar cane and for other crops. Although they are entirely ignorant of any value to be attached to nitrogenous foods, the Chinese make large use of beans of various sorts in their own diet, and in some regions the proportion of soil devoted to them is very great.

The peanut is extensively cultivated throughout northern China, and is said to have been an importation from abroad. It flourishes best on sandy soil, of which there is an unlimited supply. When the nuts are matured, the farmer knows no other way of getting them all than to pass the whole superficial area of his farm through a wire screen. Even then there are many nuts left in the ground, which are gathered by hogs turned loose for the purpose. The peanut oil is an important and increasing article of commerce, and

the profit from the crop is said to be greater than from almost any other.

Opium is grown in considerable areas in various parts of northern China, but statistics of the production are not available. In some regions the quantity is probably increasing, while in others it seems to be practically stationary. The profit is larger than on food crops, but the injury done by the withdrawal of so much productive land amid such a dense population is very great, albeit entirely unappreciated by the Chinese.

None of the crops thus far mentioned is of greater importance than cotton, which is found in certain districts in the provinces here referred to. It grows on the light soils, but not on the dark ones, and occupies a very important place in Chinese economy. If the spring is a particularly dry one, the cotton crop can not be planted at all, or if it is put in the lack of rain may destroy all the seeds. A year in which there is an amount of moisture sufficient for the grain crops is too wet for the best cotton, and, on the other hand, a year when food crops are a failure may be a good one for this great staple. The cotton plant is very unlike the stalwart growth of the cotton States of America, being often only a foot or more high. The boll is not much larger than an English walnut, and the amount of the staple in each is trifling. Yet almost all the clothing for the hundreds of millions of the Chinese race has come from this insignificant source.

During the cotton-picking season, hundreds of thousands of women and children are in the fields at work. It is for most of them the only opportunity to make a little extra money during the whole year.

Most of the processes through which the cotton is put before it is ready to be worn bear a marked resemblance to those in use in western lands a hundred years ago. The gin is a clumsy little machine in which two rollers press upon the cotton to squeeze out the seeds. It is not ideally effective, but it is a fact that expensive foreign devices for the same purpose have frequently totally failed when tried with Chinese cotton. The "scutching" is done by means of a taut bow, upon the string of which the fiber is snapped dexterously. Spinning is not unlike our own primitive methods. The fabric is invariably narrow, often not more than 12 or 15 inches wide, always of uncertain length, and of variable quality. The manufacture of cotton is at present in a transitional state, owing to the general introduction of Japanese, Indian, and, more recently, Chinese machine-spun yarns, which, while much less durable than those made in the old way, are so much cheaper that millions of women, and men also, are deprived of what previously afforded them a small but certain dependence.

As market gardeners, the Chinese excel. They have the infinite patience which is able to tire out the hosts of insect foes always lying in wait for the farmer, and they have a large variety of vegetables which they assiduously cultivate. They are very fond of melons, and these are so cheap and abundant as to bring them within reach of the poorest people.

The Chinese have for ages understood the art of grafting. Their orchards are a source of great profit, and are tended with ceaseless patience and care to protect the crop from insects, birds, and the still more dreaded human thieves. Fruit is always picked before it is ripe, to lessen the danger of losing it altogether and to make it easier of transport. Now that railways have been introduced to some extent, there is no reason why fruit crops should not be brought to a profitable market. At Chefoo, the late Dr. Nevins did much to introduce fruits of fine flavor and to teach the Chinese how to care for the orchards. The results have been evident within certain districts, but to an extent far less than would have been the case in any western land.

Chinese agriculture, like everything Chinese, illustrates the talent of this race for doing almost everything by means of almost nothing. They fatally lack initiative; but if new methods are forced upon their attention, they may be persuaded to adopt them, and, once having done so, they will not again give them up. Efforts to introduce American cotton and other foreign seeds have generally been a failure, owing to the reluctance of the Chinese to use them, and especially to the fact that the seeds themselves do not produce the results which they did in their native soil. The cotton plant grows to a luxuriant height, but it has no bolls. The same has sometimes been found to be the case with indian corn from foreign seeds, which yield a magnificent stalk, but few or no ears. Whether this would be a universal experience is not certain, but there is every probability that the seed would have to be imported at least every few years.

JAMES W. RAGSDALE,

TIENTSIN, *October 10, 1899.*

Consul.

CORN MEAL IN CHINA.

It is interesting to American corn growers to know that for the first three months of 1899 there was imported from foreign countries and coast ports a monthly average of 144,529 piculs (19,270,577 pounds) of rice to supply the demand for cheap breadstuff for this port and adjacent cities. The average price was above $4\frac{1}{2}$ cents Mexican ($2\frac{1}{4}$ cents gold) per pound.

Corn meal, grits, and hominy could be laid down here at a price which would undersell rice during more than half the year. It is only necessary to introduce the corn products in an intelligent way, so as to get the people to understand their use. A good demand and an ever-increasing outlet for the surplus corn of our Western States would be created. It would require only a few hundred dollars to do this, yet no mill has been found willing to bear any portion of the expense. One of the largest concerns in the West, when the proposition was laid before it, said it "had nothing to give away, and if Chinese wanted the meal, they could have it by paying cash."

Flour has been introduced here, in the beginning not at a profit. Its increase in consumption is marvelous. During the six months ended June 30, 1898, 28,345 piculs (3,778,389 pounds) were consumed, as against 84,446 piculs (11,278,652 pounds) for the same period of 1899, an increase of 7,508,163 pounds for the half year. This, too, in the face of the fact that flour sells for double the price of rice, while corn products could be sold at less than the average price of rice, thus commending them to the thousands of people here who must be daily supplied with food stuff imported from foreign countries.

It would be worse than folly to dump a cargo of the corn meal on this market and offer it for sale, as millers have suggested. It must be introduced by first teaching a number of cooks (who are all organized in a guild, or union) how to prepare it, and then giving away a limited amount of the cooked product through the public restaurants, which feed thousands of people. If this proposition does not appeal to the business sense of American dealers, this immense food supply will continue to come from other sources, and our surplus of corn will not reach this market.

A. BURLINGAME JOHNSON,

AMOY, *October 2, 1899.*

Consul.

FAMINE PROSPECTS IN INDIA.

From special reports recently received by the government of India, the situation may be summarized thus:

In the Northwest Provinces, it is calculated that the autumn harvest will be about two-thirds of the average, and on the whole the provinces are prosperous and should need little relief, as, in spite of the early cessation of the winter rains, the sowings are generally satisfactory. In Bengal and Burma, the rice crops are quite up to the average, and should be able to supply the distressed areas. In the Central Provinces, unless rain falls by the middle of the present

month, severe and widespread distress is inevitable; and extensive relief is also likely to be needed in the Punjab, especially in the Delhi division and elsewhere, as the crops have failed badly, and satisfactory cold-weather sowing is not probable. In Madras, the prospects are good, and if the northeast monsoon proves normal, relief should be unnecessary. A good deal of assistance will, however, be required in the northern districts of Bombay. Western India seems to suffer the most. The rains of the monsoon having largely failed—in some districts almost entirely and in others to the extent of 50 per cent or more—a failure of crops and a rise in price of fodder, grain, and food supplies have been caused.

Many distressed natives from the up-country famine districts are now flocking to the cities, hoping to find employment to save themselves from want and hunger. Luckily, the recent good rain has much benefited the Deccan. Roughly estimated, it is now calculated that a crore or a crore and a half (about \$5,000,000) will be needed in the provinces for relief up to the end of March, though much still depends on the rains of October and November. About half a crore (\$2,000,000) will be needed for the Rajputana states, and it is quite possible that the government of India will arrange to advance sums to the states for famine relief. Several railway projects are now being made available for famine labor, especially in Rajputana. It is satisfactory to know that both the imperial and local governments are on the alert, and that all preparations in connection with the probable severe distress are arranged well in advance, while the experience bought during the last famine is being fully utilized.

WILLIAM T. FEE,
Consul.

BOMBAY, *October 10, 1899.*

INDIAN UNIVERSITY OF RESEARCH.

Consul Fee writes from Bombay November 1, 1899:

The conference which has been sitting at Simla, the hot-weather capital of India, considering the scheme for a research institute, has about completed its labor. Its recommendations will be submitted to the government of India for sanction, and later will be put into legal being by proper legislation.

The inception of the idea of this institution is Mr. Tata's, a wealthy resident of Bombay, whose public spirit and munificence has made its creation possible.

It is to be named the "Indian University of Research." It will be unlike all other universities of India, in that it will neither be an

examining body nor bestow degrees, but will grant fellowship to distinguished students and graduates and afford them facilities for research and investigation in the broadest sense possible. It will have a university court, consisting of a chancellor, a vice-chancellor, one member to represent the supreme government of India, one to represent each of the eight local governments, one for each of the five existing Indian universities, one to represent Mr. Tata, and one to be added for any benefactor who may subscribe not less than 15,000 rupees.

The site, the question of which gave rise to no little discussion, was finally granted to Bombay, with Bangalore, the chief city of the native state of Mysore, as a second choice. The fact that the Mysore government had offered to donate a site and a handsome contribution to the building may have been an attraction.

It is recommended that this new university cooperate with existing institutions by giving assistance to original scientific research where this work is now in any way hampered or curtailed.

The conception of this institution is as broad as its ultimate development will be vast. It will give a livelier tone to higher education in India, and be a noble monument to its founders and promoters.

FRENCH COMMERCE WITH INDO CHINA.

Mr. H. Brennier, sub-director of the commerce of Indo China, has written a report to the French Government on the business between that colony and France for the year 1898. M. Brennier was at the head of the Lyonesse mission that visited Indo China four years ago and remained there two years, studying the commercial and industrial possibilities of that French colony. He is the author of a large volume on conditions in Indo China.

In his recent report, M. Brennier says:

The importations into Indo China for the year 1898, not including specie, were:

	Francs.
From France and the colonies.....	44, 415, 786= \$8, 572, 247
From foreign countries.....	58, 028, 560= 11, 199, 512
Total	102, 444, 346= 19, 771, 754

The excess of imports from foreign countries consists of commodities that France can not produce, such as petroleum, opium, noix d'arec, tea, Asiatic manufactures (such as clothing and shoes of silk), or products which France could furnish only at an immense cost.

Referring to articles of extra-Asiatic origin or manufacture, it would be difficult to deny that, under the protective tariff, importations from France tends to as complete a development as is possible, and have made enormous progress. Textile fabrics, stones and combustible minerals, liquors, manufactures in metal and metals, arms, powder, and munitions, and divers manufactured articles represent over 60

per cent of the imports. Over 50 per cent of this percentage belongs to France. We sell 85 per cent of the cotton fabrics consumed in Indo China. We can not compete with China in silks, any more than we can furnish the petroleum or coal. The demand for colonial commodities is being more and more supplied by the country itself. An experience of over six years has proved that in the matter of cotton yarn it is impossible to overcome the competition of British India, even with a protective tariff of 25 per cent. French products are powerless to struggle against the British India product, which represents a value of 9,600,000 francs (\$1,852,800) in the imports. But the establishment of the spinning industry in Tonkin will permit us at least to remunerate French capital, since we can not consume French cotton.

The value of French imports into Indo China is stated as follows:

Year.	Value.	
	<i>Francs.</i>	
1886	15,513,000	\$2,994,009
1894 (after the tariff act of 1892).....	20,141,000	3,887,213
1895	28,326,000	5,466,918
1896	29,385,000	5,671,305
1897	35,784,000	6,906,312
1898	44,415,000	8,572,095

This is a progress of 300 per cent in twelve years and 200 per cent during the last four years. During the period 1886-1898, the total imports of Indo China have increased only about 17 per cent, as shown below:

	<i>Francs.</i>
1886.....	85,800,000 = \$16,559,400
1898.....	102,400,000 = 19,763,200

The 44,415,000 francs' (\$8,572,000) worth of exports from France in 1898 were distributed as follows:

	<i>Francs.</i>
Cochin China and Cambodia.....	23,481,000 = \$4,531,833
Tonkin.....	20,413,000 = 3,939,709
Anam.....	474,000 = 91,482

The 58,028,000 francs' (\$11,199,000) worth of foreign merchandise was distributed as follows:

	<i>Francs.</i>
Cochin China and Cambodia.....	31,482,000 = \$6,076,026
Tonkin.....	23,248,000 = 4,486,864
Anam.....	3,298,000 = 636,514

The merchandise received from foreign countries was principally from:

	<i>Francs.</i>
Hongkong	39,700,000 = \$7,662,100
Singapore.....	7,348,000 = 1,418,164

The report emphasizes the importance of Hongkong in the colonial commerce of France. It fixes the value of Chinese merchandise sold in Indo China at 20,000,000 francs (\$3,860,000).

JOHN C. COVERT,
Consul.

LYONS, November 8, 1899.

AUCTION OF QUININE IN BATAVIA.

Referring to my report on "Cinchona bark and quinine," of June 16,* in which I discussed the quinine situation in this country and in Europe and related how efforts were being made here to sell the product of the Java plantations independently of the trust in Europe, I now have to state that these efforts have been crowned with success, and that the first public auction in this colony of sulphate of quinine will take place in this city about the end of January or February next.

The following will be sold: (1) About 5,000 to 6,000 kilograms of sulphate of quinine, satisfying the requirements of edition 2 of the Pharmacopea Neerlandica; (2) about 1,000 kilograms, satisfying the requirements of Pharmacopea Neerlandica, edition 3. The lots will be as follows: (a) Cases of 25 tins, containing each 1 kilogram net, making 25 kilograms net; (b) lots of 2 cases of 4 tins of 2.835 kilograms each, making a total of 22.68 kilograms.

Each case is marked with the trade-mark of the "Bandoengsche Kinine-fabriek," and the best of packing is assured by the said factory, which has already sent out samples.

The analysis will be verified by the Government director of quinine enterprises in Netherlands India, whose official position and signature I shall be glad to certify to.

Payments must be made within a month after the auction at Batavia, unless the goods are shipped sooner; but the firms named below will permit the quinine purchased to remain in their warehouses, free of charge, for two months after the auction.

In other respects, the usual conditions of trade will govern; but a circular is being prepared giving fuller details, and I shall transmit the same as soon as it appears.

The following firms have announced their willingness to act as agents for American houses: Erdmann & Sielsken, Maintz & Co., MacLaine Watson & Co., J. Peet & Co. They will send samples to anyone desiring them.

I can not impress too strongly on American firms the advisability of taking advantage of this opportunity. For years, the Americans have been at the mercy of the European quinine trust, as I demonstrated in my report above referred to, and now is the time to declare their independence and get their product direct from the source of supply.

If this first auction is a success, and there is no reason to suppose

it will not be, it will be followed by others and will become a regular institution. Inasmuch as Java produces seven-tenths of the world's supply of quinine, it is logical that Batavia should be the quinine market of the world.

The shipments of sulphate of quinine from here direct to the United States began about a year and a half ago, and already over 500,000 ounces have been shipped, and orders are continually coming for more.

SIDNEY B. EVERETT,

BATAVIA, *October 14, 1899.*

Consul.

BOGUS LEGACIES IN DUTCH INDIA.

During my term of office I have received many letters from citizens of the United States, stating that from thirty to eighty years ago some relative of theirs came here, amassed a very large fortune, and then died, without having for years had any communication with his family and without having left them any money. I am requested to look the matter up and take what steps I can to obtain the fortune for them. The ancestor, it is usually stated, came here in the colonial army.

I have always taken considerable trouble in the matter, and have had the officials of the "Wees- en Boedelkamer" (the court which administers on orphans, bankrupts, wills, and legacies) carefully examine the records, which are very well kept here, for sometimes as much as ninety years back, but so far in not a single instance has the faintest proof of my correspondent's assertion been forthcoming. The persons named are never found to have been in this colony, nor is there any trace of a fortune.

Even if there were something in the claim, there would be no chance of securing any money, as under Dutch law no suits can be brought to recover property after thirty years from the death of the testator. If a person has died intestate, leaving apparently no heirs or kin, the Weeskamer takes charge of the property until some one can prove right to it. If no one appears within thirty years, the property reverts forever to the State, and there is no possible way of reopening the case or obtaining any of the property, even by producing the most convincing proofs of consanguinity.

At the best, contesting wills or disposition of property is very difficult here, and unless the claimant himself is on the spot there is little chance of recovering anything.

Another thing to take into consideration is that many men, especially those who enlisted in the colonial army (quite a distinct thing from the Dutch army in Holland), came out here under assumed

names, and to trace them would be almost impossible. Many, too, married half-caste or native women, and their property naturally went to their children. In this country, people scatter or die very quickly, and the difficulties of bringing suit would be far greater than at home.

I trust the Department will give through the CONSULAR REPORTS as much publicity as possible to this matter, so as to save time and trouble to all parties and prevent innocent people being duped by unscrupulous claim agents.

SIDNEY B. EVERETT,
Consul.

BATAVIA, *September 23, 1899.*

CACAO IN SAMOA.

Consul-General Osborn, of Apia, on November 2, 1899, sends an article by Mr. H. J. Moors, one of the leading planters in Samoa, on the condition of cacao in the islands.

The article reads:

So far as I know, there are now planted by our foreign residents about 300 acres in all, two-thirds of which property is either now in bearing condition or will become so next year. It is quite impossible to say how much cacao has been planted and is to-day in good order on native lands. The different wars that have intervened during the past few years and the dry seasons of 1896 and 1897 worked very great damage in this direction, and it is possible that at present only a small proportion of the trees originally set out have survived the vicissitudes through which they have had to pass. I doubt if 100 acres all told now remain in order, and these are so scattered that their product is of little value to their owners, being in most instances too remote from any trader who will buy and cure it. Undoubtedly, the Samoan people will eventually turn their attention more in the direction of this industry, and it will then be seen that these scattered cultivations will furnish a near-by supply of seeds and plants for those who wish to take the matter in hand.

Cacao is generally planted in rows about 14 feet apart and on hillsides at closer distances. Some planters favor a wider spacing; thus it will be seen that from 180 to 225 trees are usually planted to each acre of ground occupied.

During the third year a small crop is produced, but not until the fourth year is the crop of any appreciable value. Each year thereafter, as far as my short experience goes, the crops increase, and at the present time I can not even conjecture how much may ultimately be produced.

On my Papalaloea plantation, after clearing my land of the forest growth, I set out rows of bananas in lines 15 feet apart, and when these were well under way and offering good shade, I planted my cacao with spaces of 15 feet on parts of the land and 18 feet on other portions. Along all the different roads I planted pine-apples, and I also devoted several fields to them. I have reserved for pasturage about 8 acres all told, and it may seem astonishing to people outside of Samoa when I say that that land has furnished abundant pasturage for six horses, fifteen sheep, and twenty-one head of cattle. I can not from memory say just how much

fruit I shipped last year from this place to Auckland, nor how many head of cattle I sold out of the natural increase of the place; but I am well assured that my net profits, after paying every expense, were upward of \$1,200. This from 60 acres all told is very satisfactory, considering that all was obtained from catch crops (bananas and pines) planted mostly to shade my cacao, from which, during the next two years, I expect very profitable returns.

During the early months of this year, Papalaloea was raided in turn by both factions then at war, and I have up to now been unable to procure a sufficient supply of laborers to put it in its former fine condition. Though the whole of the crops was carried off or consumed on the spot during three months when hostilities existed, it is safe to say that from the sale of the fine fruit crop now coming on, I will still this year be able to score at least as good a net profit as last; though this will not cover the great loss I met with in the destruction of my herd of cattle and the loss of 750 cacao trees wantonly pulled up by the adherents of Tanu and Tamasese.

Part of my cacao has just commenced to bear, and I am forwarding its seed pods to my different trading stations as fast as they come on. At these points they are freely given to the natives, who are now commencing the cultivation of cacao in good earnest in several districts. At Pago Pago, I have at present about 3,000 trees in all stages of growth, and on my property there I have still room for about 2,000 more plants, which will be set out this year.

The high chief, Mataafa, is taking interest in this cultivation, and his family and neighbors at Amaile have been commanded to turn their attention in this direction. In 1893, Mataafa set out several thousand trees at Malie, but the raiding Malietoans destroyed them all during that year; else these would now have been fine bearing trees.

I understand that Mr. Caruthers obtained a net profit of over \$900 from less than 8 acres of cacao during last year, and that cacao was all of it less than five years of age at the time. Besides this, from the same land Mr. Caruthers had a very considerable quantity of fine pines, which I was able to pay a good price for, and his horses and cattle were able to find good grazing on this same land under the trees.

More than two-thirds of all the lands in Samoa are suitable for the growth of cacao, but only on lands situated near Apia can fruit be profitably cultivated as a catch crop. Wherever parties locate beyond this district, I would favor a totally different procedure, which, in the end, would likely have as good or possibly better results; but during the long wait for cacao crops, the planter would be compelled to maintain himself out of funds with which he would have to be equipped before starting in or supplied with as he went along from other sources than from his land.

Excellent land in the neighborhood of Apia can still be had at from \$15 to \$50 per acre. The cost of clearing it and planting in fruit and cacao will be all of \$50 more. The first returns from fruit will not be at hand until about fourteen months after starting; possibly not for eighteen months. Thereafter the income will be steady, each month giving in its returns, for by every steamer shipments are made.

A fairly good supply of laborers has usually been on hand until during the past few months, since the copra season opened up so strongly. At the present time, I am on the point of sending a vessel out to Nieuve to bring me about twenty-five men, whom I expect to engage for two years at the rate of \$8 per month. This is considered a high wage, but the men are usually excellent workers, faithful and reliable.

After Papalaloea is cleared up I expect that eight men will be sufficient for that place while we are still raising fruit for export. Next year, I will have to abandon

this on account of the rapid growth of my cacao. When this is done, I will increase the number of my cattle to fifty or sixty at least, and their natural increase will probably bring me nearly as much as I should have received from the fruit, and this, too, with less labor and trouble.

Where parties decide to locate beyond the neighborhood of Apia, I would advise that they do not undertake to cut down the whole of the forest before planting their cacao, but that they only thin out the bush so as to let in light and air; then set out their cacao and each season ring bark certain trees, which will die and crumble down, until at last they ring bark the last remaining forest giants. These will die gradually, the leaves will fall off, the small branches will be broken and blown down by the winds, insects and decay will attack the trunks, and in the course of a few years they will come to the ground with little or no damage to the cacao trees. While the forest stands, very few weeds will invade the place, and the expense of cultivation will be very much lessened as compared with the expense where fruit and cacao are cultivated in the open.

The quality of our Samoan cacao is said to be of the highest class. So far, we have had extremely high prices for it, and the purchasers have always expressed regret that we have had only a little to offer. Two years hence, the proceeds of our cacao will add appreciably to our general income, and if the natives take hold, as they surely will in case a new government is rightly started, it is more than likely that cacao will in a short time represent our most valuable export.

Vanilla has been tried here with success, and more of it is being set out. With proper cultivation, there is not the smallest doubt but that this product will also take a high place among our industries.

The present year's copra crop has been so prolific that laborers are just now hard to procure; but a few months hence it is likely that this will not be so much the case, as several would-be employers are talking of sending out vessels to other islands for a supply of men willing to work at reasonable wages.

I am so convinced of the success of our cacao that wherever I have a trading station I am starting now to cultivate it. If I have no land in that neighborhood, I lease some from the adjoining natives, who always have plenty to spare at 50 cents per acre per annum for forty years, as the law allows. I am about to start the cultivation of cacao at Saluafata, Safata, and Fasitoo, and also probably at Fagaitua, on Tutuilla.

Throughout the group, natives have large tracts of fine lands lying idle, which they are most anxious to lease at very low rates. I know of some excellent land not too far from Apia offered to-day at a price as low as 25 cents per acre per annum for a very long period.

Living is fairly cheap here, in any case, and if one can content himself with native productions (which are wholesome and good when well cooked), I may safely say it is as cheap as in the most favored country.

A mistake easily made by outsiders is to attempt to cultivate larger areas than they can well look after. My experience is that from 20 acres well cultivated one will get better satisfaction than from 50 acres partially neglected.

General-merchandise business here is fairly good, owing to the large amount of copra offered for sale. Most of the stuff imported comes either from the British colonies or from Europe; not so much because the goods are cheaper or more suitable than from other countries, but because of more frequent communication and lower freights. I have at this writing ordered a cargo lot of goods from San Francisco by sail, and in return I will send back 250 or more tons of copra in payment. I hope to order a similar or larger cargo again early next year, and to revive a business once quite active between this port and the United States.

SUGAR CROP OF HAWAII.

Vice and Deputy Consul-General Boyd sends from Honolulu, under date of November 23, 1899, a statement prepared by the Hawaiian Sugar Planters' Association, showing the number of tons of sugar produced on the Hawaiian Islands from October 1, 1898, to September 30, 1899. The statement shows that 282,807 tons were produced on all the islands, and also shows the number of tons produced on each plantation as well as on each island of the group. The figures, together with the estimate for the sugar crop of 1899-1900 (transmitted by Consul-General Haywood under date of December 2), follow:

Hawaiian sugar crop, 1898-99.

Plantation.	Quantity.	Plantation.	Quantity.
<i>Hawaii.</i>	<i>Tons.</i>	<i>Maui—Continued.</i>	<i>Tons.</i>
Waialea Mill Company.....	9,191	Paia Plantation.....	6,268
Hilo Portuguese Sugar Mill Company..	932	Wailuku Sugar Company.....	7,412
Hilo Sugar Company.....	6,880	Olowalu Company.....	1,502
Onomea Sugar Company	8,404	Pioneer Mill Company, Limited.....	10,589
Pepeekeo Sugar Company.....	7,350	Total.....	54,389
Honomu Sugar Company	4,968		
Hakalau Plantation Company.....	8,980	<i>Oahu.</i>	
Laupahoehoe Sugar Company.....	5,337	Waimanalo Sugar Company.....	2,352
Ookala Sugar Company.....	3,564	Heeia Agricultural Company, Limited..	2,191
Kukalau Plantation Company.....	1,748	Laie Plantation.....	494
Kukalau Mill Company.....	1,732	Kahuku Plantation Company.....	7,008
Hamakua Mill Company.....	6,081	Waianae Company.....	3,566
Paauhau Plantation Company.....	7,529	Ewa Plantation Company.....	22,334
Honokaa Sugar Company.....	9,111	Oahu Sugar Company.....	7,935
Pacific Sugar Mill.....	4,650	Total.....	45,820
Niuli Mill and Plantation.....	2,226		
Halawa Plantation.....	1,049	<i>Kauai.</i>	
Kohala Sugar Company.....	4,119	Kilauea Sugar Company.....	5,420
Union Mill Company.....	1,668	Makee Sugar Company.....	9,350
Hawi Mill (R. R. Hind).....	1,222	Lihue Plantation Company.....	13,333
Beecroft Plantation.....	609	A. S. Wilcox.....	3,962
Hutchinson Sugar Plantation Company	7,732	Koloa Sugar Company.....	1,751
Hawaiian Agricultural Company.....	11,318	Grove Farm Plantation.....	5,268
L. Chong (at Pahala).....	839	McBryde Sugar Company.....	1,491
Total.....	117,239	Hawaiian Sugar Company.....	14,350
		Gay & Robinson.....	1,821
<i>Maui.</i>		Waimea Sugar Mill Company.....	1,021
Kipahulu Sugar Company.....	1,931	Kekaha Sugar Company.....	6,942
Hamoia Plantation.....	2,026	Estate V. Knudsen.....	650
Hana Plantation Company.....	3,175	Total.....	65,359
Haiku Sugar Company.....	4,865		
Hawaiian Commercial and Sugar Com- pany	16,621	Grand total.....	282,807

Estimate of Hawaiian sugar crop, 1899-1900.

Plantation.	Quantity.	Plantation.	Quantity.
<i>Oahu.</i>	<i>Tons.</i>	<i>Hawaii—Continued.</i>	<i>Tons.</i>
Ewa Plantation.....	24,700	Ookala Sugar Company.....	3,500
Waianae Plantation Company.....	4,000	Laupahoehoe Sugar Company.....	4,400
Waialua Agricultural Company.....	6,000	Hakalau Plantation Company.....	11,000
Kahuku Plantation Company.....	5,000	Honomu Sugar Company.....	5,000
Laie Plantation.....	400	Pepeekeo Sugar Company.....	7,000
Heeia Agricultural Company.....	2,250	Onomea Sugar Company.....	6,463
Waimanalo Sugar Company.....	3,250	Hilo Sugar Company.....	7,000
Oahu Sugar Company.....	14,000	Waiakea Mill Company.....	8,000
Honolulu Sugar Company.....	New.	Hawaiian Agricultural Company.....	9,000
Total.....	58,900	Hutchinson Sugar Plantation Com- pany.....	8,000
<i>Maui.</i>		Hawi Mill.....	3,000
Olowalu Sugar Company.....	1,550	Beecroft Plantation.....	500
Pioneer Mill Company.....	14,000	Union Mill Company.....	1,800
Wailuku Sugar Company.....	7,100	Kohala Sugar Company.....	3,600
Hawaiian Commercial and Sugar Com- pany.....	16,000	Halawa Plantation.....	1,400
Pala Plantation.....	7,000	Niulii Mill.....	1,800
Haiku Sugar Company.....	5,800	Pacific Sugar Mill.....	4,690
Hana Plantation Company.....	3,800	Honokaa Sugar Company.....	9,500
Hamoia Plantation Company.....	2,200	Kona Sugar Company.....	500
Kipahulu Sugar Company.....	1,900	Hilo Portuguese Sugar Mill Company	800
Kihel Plantation Company.....	New.	Olaa Sugar Company.....	New.
Haiku Sugar Company.....	New.	Total.....	119,953
Total.....	59,350	<i>Kauai.</i>	
<i>Molokai.</i>		Kilauea Sugar Company.....	5,500
American Sugar Company.....	New.	Makee Sugar Company.....	10,000
Kamalo Sugar Company.....	New.	Lihue and Hanamaulu Mills.....	16,000
<i>Lanai.</i>		Koloa Sugar Company.....	4,500
Maunalei Sugar Company.....	New.	Hawaiian Sugar Company.....	16,000
Palawai Development Association.....	New.	Gay & Robinson.....	1,600
<i>Hawaii.</i>		Waimea Sugar Mill.....	1,000
Paauihau Plantation Company.....	8,000	Kekaha Sugar Company.....	7,500
Hamakua Mill Company.....	9,000	Grove Farm.....	2,900
Kukaula Plantation Company.....	2,500	McBryde Sugar Company.....	1,400
Kukaula Mill Company.....	3,480	Total.....	66,400
		Grand total.....	304,603

LABOR IN HAWAII.

The special agent of the United States at Honolulu, Mr. Sewell, sends, under date of December 6, 1899, copy of a report on the conditions of labor in Hawaii by the secretary of the bureau of immigration, Mr. Wray Taylor, as follows:

The purpose of the following is to attempt to trace an outline and fill in just enough detail to give a correct view and intelligent idea of Hawaiian labor conditions as they exist to-day, without trenching broadly on ground already covered by reports and exhaustive schedules and tables.

FREE AND CONTRACT LABOR.

The ordinary manual work on a plantation is performed by unskilled labor, which may be divided into two classes—contract and free.

Contract labor, consisting of Japanese, Chinese, Portuguese, Italian, Hungarian, Hawaiian, and others, is held under contract for three years when coming direct from foreign countries under agreement, and for the same or a shorter period when contracting after a previous sojourn in this country.

Free labor, consisting of the same nationalities mentioned above, is employed by the day or month, without contract, and has come into the country as free labor or has fulfilled a previous three-year contract and is then free to work where employment may be obtained.

This free-labor contingent is a fluctuating and uncertain quantity—here to-day and there to-morrow—working at will, and seeking the places where most favorable conditions and highest wages are in vogue. The free laborers receive higher pay than contract men, but may be discharged at a moment's notice, and the plantation owes them nothing but shelter and wages for work done.

The contract man occupies quite a different position with reference to his employer. He is assured of steady work at a fixed sum per month. He can claim and receives not only unfurnished lodging for himself and family, but fuel, water, taxes paid, medical attendance, and certain other privileges; and for this he must work, when able, a certain fixed time per day, and a certain number of days per month, wherever it pleases the employer, and fulfill in other respects the terms of his contract.

When contract laborers are needed from abroad, application is made to the Government for permission to import laborers of the desired nationality. If permission is granted, the order to recruit them is given to immigration companies, authorized by law, who employ recruiting agents in the localities whence the men are to be drawn. These companies are then responsible for the delivery of the required number of men to the final employer.

In obtaining European labor, the planters have the benefit of the authority, forms, and official connection of the board of immigration; and, while all expenses are met by the planters in the first instance, afterward a sum, not to exceed \$130 for each family, is paid by the Government to cover recruiting expenses and passage of women and children accompanying the immigrants. In this case, the immigrant contracts with the board of immigration and signs his agreement before the Hawaiian consul at the port of departure in his own country. In this case, also, steerage passage, food, and medical attendance are furnished free to his destination, and oftentimes a money advance is given, this to be repaid in small monthly installments. The board of immigration assigns these laborers to their several employers, and they are at no expense until they reach their field of labor.

The only other laborers now imported are Japanese. The companies supplying these are chartered by the Japanese Government, and have their principal offices in Japan. They are under heavy bonds and are compelled to submit all arrangements to the governor of the district in which the agency is located, and he is held responsible by the General Government.

Laborers are shipped from the recruiting offices to the immigration company, which then bears all expense and responsibility for maintenance, transportation, quarantine expenses, etc., until assigned and delivered to the planter employer. In order to protect themselves against desertion, these companies exact security in the shape of mortgage, bond, or deposit from the laborer or his friends to an amount equal to all expenses. Thus the companies are able to insure the employer against loss by desertion and, upon information, return to the planter a proportionate amount, according to the period not served.

Mail steamships, or those specially chartered, bring these immigrants in the steerage and deliver them to the quarantine officers in Honolulu. Here the health regulations require careful examination and fumigation of effects, and here also

the laborers are apportioned to their several employers, signing their special contracts before an authorized Hawaiian official assisted by interpreters.

In order to guard against the introduction of physically feeble and incapable men, each male immigrant is examined by a qualified medical man in Japan for the protection of the company and again in Honolulu for the benefit of the planter. Any ailment sufficient to incapacitate a man for labor, or which might reasonably be pleaded as probable excuse for idleness, or which at any time may be expected to deprive the employer of service, is cause for rejection. The rejected one, if in Japan, is of course not shipped. If in Honolulu and the ailment is curable, he is sent to a hospital and receives treatment; if incurable, but able to do light work, he is assigned to easy employment. If incurable and incapable, he is returned to his home. All this is at the expense of the immigration company.

Now, we will suppose the immigrant, single or married, to have fulfilled the legal requirements of his own country, to have safely run the gauntlet of medical inspection and examination, and, together with his compatriots, to have taken steerage on a large steamer, the accommodations neither better nor worse, neither more nor less limited, than most of this class—a sleeping platform, water enough for limited ablutions, food good enough and ample enough to ward off complaints—and after a generally comfortable voyage to be landed on Quarantine Island with his trunk or basket and bundle, his little all.

His stay here is comfortable and not extended, though he is strictly confined and under control. A good bath is the first matter attended to; then a thorough disinfection of his effects, and he is housed in large, open barracks. His photograph is taken for identification, and he is then assigned to a particular corporation.

His final medical examination is the next step in order, and, if passed, we will suppose him to have been taken with his belongings aboard of an island steamer and furnished with a deck passage. This includes a protecting roof or awning overhead and a bare deck beneath him. Wrapped in his blanket, a bundle under his head for a pillow, he passes the hours of a night and perhaps a day in as comfortable a manner as he may until he is landed at his destination.

LODGINGS.

The quarters furnished by the plantation are grouped together in camps, located with reference to convenience to work, and for the most part with regard to drainage and sanitary conditions.

The kind of building varies with the class of labor. European labor has for a family, or for two single men, two rooms in a four-room cottage. Chinese, being single men, are housed in barracks with from six to forty men in a room. Single Japanese are often provided for in the same way; sometimes, however, only two occupying the same room. Married Japanese are furnished with a small room for each family.

These houses are rough frame buildings, shingle or iron roofed, with 6-foot-wide covered porches extending their whole length. All lately erected buildings are well raised from the ground. Most have walls 8 to 10 feet high from floor to roof plate. The height of ridge pole above this is from 4 to 6 feet. Beneath the roof there is no ceiling, and when divided into rooms, these are all open at the top, with a clear space above from end to end of the building. Cottages have partitions reaching the roof. All walls are whitewashed. Often, the space between the rafters above the roof plate is left open for ventilation.

These quarters furnish only a shelter and a place of rest. Nothing more is attempted. In barracks where many single men are collected, a platform 6 to 8 feet wide and raised 2 feet above the floor runs the length of the building, and each

man has about 3 feet in width of space for himself to sleep on. The floor space is common property. Again, tiers of shelves 3 feet wide along the sides of the room, sometimes three or four tiers high, with some slight, low partitions, give about 3 by 6 feet for a man.

In the family rooms is a platform 2 feet above the floor taking up about two-thirds of the floor space. On this the family sleep and live when at home. The above is for the Japanese. The European cottages are often supplied with rude box bedsteads and perhaps a table and bench. All else must be furnished by the laborer. Generally, a piece of straw matting serves for a mattress, a blanket or quilt for covering, and a hard neck rest, common to Japan and China, answers for a pillow. Mosquito nettings are a necessity and are found everywhere. The European fills a tick with hay, and a pillow of the same with a blanket convinces him that this is all that a healthy man needs for a bed. Comforts and conveniences vary with the ambition and tastes of the laborer, and are of course measured generally by the length of the purse.

For cooking purposes, all kinds of makeshifts find a use. Most characteristic of a Japanese camp is the rude stove made from a kerosene-oil tin or paint-oil drum. Placed upon end, the top is cut off and one side cut down to within 4 to 6 inches from the bottom. This bottom is filled with clay as a bed for fire, and iron rods or pieces of hoop iron are run through from side to side 6 inches above this to support cooking utensils. All along the edge of the 6-foot porch above mentioned these little stoves may be seen, arranged in front of and convenient to the doors of the respective rooms.

Many plantations provide central cook houses, with or without ovens, and large caldrons. Some furnish dining rooms with tables and benches.

Who does the cooking? The wife for the family and at times for a few single men, from whom she receives pay; single men cook for themselves or club together and hire one of their number to cook for them. Often the plantation furnishes cooks. Wood and water are provided, the latter sometimes from surface wells near the camps, but generally through pipes from a distance. Wood is either brought to the door by the plantation, or, as in many instances, the laborer is permitted in his leisure moments to supply himself. Sometimes, a money equivalent is paid.

Oriental labor demands, as a necessity, a hot bath at the close of the day. To supply this demand large wooden tubs, with iron bottoms, capable of holding six to eight persons, arranged so that a fire beneath can heat a large body of water, in the open or under a roof, are supplied either by the plantation—in which case the bath is free—or by someone among the laborers, in which latter case a small monthly fee is paid.

Often times, a small plot of ground is utilized by the laborer for vegetables, with the consent of the planter. Few, however, of the orientals avail themselves of this privilege. More raise pigs and fowls, and in this way increase their income.

FOOD.

The staple article of diet among orientals, here as elsewhere, is rice. Chinese add pork, or vegetables, and certain Chinese dried, salted, and otherwise preserved food, imported from their own country. Ducks are in favor with them, and tea in quantity is a never-failing beverage.

Japanese add beans in various forms, sauces, vegetables, etc., imported from their own country. Beef, milk, and wheat bread they soon learn to eat and become partial to. Tea is the principal drink.

European laborers do not fare differently from those in their own country.

EMPLOYMENT.

Contract laborers are expected to do agricultural and mill work. The former comprises clearing land, cutting wood and brush, grubbing out roots, moving rocks and brush, teaming and plowing, care of horses, ditching, hoeing, irrigating, fertilizing, planting, stripping and cutting cane, loading and unloading cane cars, and any other necessary farming operations. In and about the mill they are occupied in feeding the cane carrier and furnaces, tending any of the mill machinery, handling sugar, loading cars, etc.

From the contract-labor class the carpenter, blacksmith, engineers, and sugar boilers select their assistants, and these, as they learn and become competent, obtain higher wages and often command from \$30 to \$60 per month.

When the profit-sharing system is in practice, contract men, if deserving, are allowed to take these special contracts and have made from \$25 to \$35 per month. In a few places, men have been allowed to take small pieces of land and cultivate them at their leisure. In order to do this, they are compelled to work early and late, Sundays and holidays, and the mill buys the cane at a fixed rate per pound.

Between one-third and one-half of the women work in the field and about the mill, at the lighter kinds of labor. There is no compulsion. They have many ways of earning money in the camp. After attending to their household duties, which are few and simple, they find time to wash, cook, and sew for others. In these ways, the woman often can earn more than her husband.

Many of the laborers save quite large amounts of money during the term of their contract. It is not unusual for Chinese and Japanese when leaving for the Orient to have in their possession all the way from \$100 to \$300 money saved. Some even are credited with larger amounts, and this means a great deal to them in their own country. It is the reverse with others; they have not a cent, are always in debt, and when they wish to return home they have to borrow their passage money from friends.

WORKING HOURS.

The number of hours is settled in the contract, being usually ten hours in the field and twelve in the factory.

The day begins at an hour varying with the season, taking advantage of the light in the early morning. A rising bell or whistle wakes the men at, say, 4.30 a. m. At 5.30 they are ready to proceed to the field, and at 6 o'clock the workday commences. From 11.30 to 12 noon there is an intermission for lunch in the field; then they work till 4.30 p. m.

The mill man begins at 5.30 a. m. and is relieved by the night shift at 6 p. m. Overtime is paid for at a contract rate. In some cases, time is counted from the time of departure for the field.

WAGES.

Wages vary according to supply of labor, and in many instances are governed by the price of sugar. The contract price is now \$15 per month for oriental and \$18 for European laborers. Old contracts call for only \$12.50 for oriental; but in most cases a \$2.50 bonus is given to these latter, conditioned on good behavior. Women receive \$7.50 to \$10 per month. Only actual time spent in labor is paid for. A man receives no pay for enforced idleness, whether caused by sickness or anything else. A plantation official, called a timekeeper, keeps strict account of working time and the pay roll is made out from his report.

Generally, the wages are paid on a fixed and convenient day between the 3d and 15th of every month, for the previous calendar month. The individual presents his identifying tag and receives the amount that is to the credit of that number.

Whether in the field or in the mill, the men work in gangs varying in number and supervised by an overseer, who directs their work, corrects mistakes, instructs the ignorant, and stimulates the lazy. He leads them out in the morning and gives them the signal for cessation at the proper times. The overseers are generally white men, and a successful one must be patient, firm, fair, energetic, and judicious. Often he is timekeeper and always a monitor. The character of the overseer frequently determines whether there is contentment or trouble among the laborers.

Force, in constraint, is not allowed and is fast giving place to other methods. Tact, a withdrawal of privileges, and recourse to legal fines and imprisonment are the means used. Rewards for good behavior are not uncommon.

MEDICAL WORK.

The physician employed by a sugar corporation occupies a peculiar position with reference to his patients and his employer. It must be remembered that usually in the rush to make the progress of the work match with the season, the management demands every available man among his employees and looks with suspicious and jealous eye upon anyone who claims exemption through sickness. On the other hand, the laborer wishes a day off now and then, and often can make more money gambling in the night than working in the day, and is scarcely fit for work after a night so spent. Also, when bad weather comes or disagreeable work is in progress, the tendency is to have a greatly increased sick list. Now, it becomes the duty of the medical man to determine between the really ill and the malingerer, and naturally the malingerer often goes away dissatisfied. The sick are treated at the office if able to present themselves, or at home if more seriously ill. Naturally, among a mixed class of this kind, treatment is unsatisfactory and is carried out with very little aid from the patient. It is becoming now the custom to provide hospitals for serious ailments. I believe there are fourteen already maintained, principally by plantations. The more common serious ailments are dysentery, remittent fever, and beriberi, which may be charged to the water, the food, and the opening of new land, as well as the stirring up of old accumulated filth.

ACTUAL CONDITIONS.

To take a general view of the real state of affairs one must consider that every labor camp is a busy hive. Work is going on, and work is paid for and is what the men come here for.

Now, what are the hardships? The main one is compulsory work under a master. Here the law compels. At home, need held the whip. They expected to work when they came; but the comparison with free men makes compulsion seem a hardship. Generally they are contented. The sewing machine is common in every camp. The tailoress plies her trade. The petty storekeeper, with his room nearly filled with goods, drives his bargains with his countrymen. All day long the simple laundering is in progress. The mother works with her babe near at hand, while the older children are at school. The happy chatter of women's tongues does not evidence discontent. There is food enough and a place to eat and sleep and live in, equal in comfort to that they have left behind. Conveniences are multiplying. The laborer returns to his home in the evening, and every repression is relaxed.

Sunday is a day for rest in most cases. The barber is in demand. Clean clothes are donned, and the pipe and cigarette lend solace. No one would dream of hardship to look in their faces. (Parenthetically, I may remark that a labor camp is no place for a sick person.) For amusements there are wrestling matches, peculiar dramatic entertainments, and gambling games with all sorts of counters.

But let some real or fancied grievance break the monotony, and the scene changes. A tin pan is beaten noisily to alarm and summon the camp. The motley crowd gathers, generally at night. The leaders harangue their followers, and the mob, most of them ignorant of the real cause, rush off to demand redress or punish the offender.

The grievance is generally an assault by the overseer upon some laborer, a fine considered unjust, a compulsion used to obtain unwilling work, or a privilege withdrawn. The grievance is to the individual, and the crowd make it their own. It is not generally felt very deeply, and in most cases a little tact smooths out everything, and the even flow of events is again attained.

The question may be asked, Why, if they are contented, do they desert? There are several reasons. Natural causes may render the work disagreeable and burdensome, as rain, cold, mud, and overgrowth of weeds. A severe overseer will render all discontented, and the boldest will desert. Accumulated debt is a prolific cause; pure laziness is another. The prospect of getting better wages and the allurements of being with friends entice many away from their contract master.

They came here, not to settle and make homes, but in as few years as possible to accumulate sufficient to enable them to return to their native country with capital enough to live on in a manner superior to their own class at home. With this object in view, as a class, they are saving to an extreme degree. A Japanese will live on from \$4 to \$6 per month; a Chinaman, from \$9 to \$11 per month; and a European, \$11 to \$13. The latter only is likely to be assimilated and become a desirable citizen.

The foregoing is a brief and unadorned statement of facts as found. From these it may be gathered that, as a rule, plantations furnish all that the law demands, but are not carried on primarily for the purpose of elevating the laborer to the standard of western civilization and morals any more than other corporations. True it is that influences in these directions are often present and have decided effect in certain directions. Upon the coolie class of Chinese, the effect is not perceptible. Upon the Japanese, it is shown in the adoption of any means that promise an increase in money and personal importance. Upon the European, the full effect is marked in steady progress toward Anglo-Saxon ideals.

Under date of December 2, 1899, Consul-General Haywood, of Honolulu, transmits tables compiled by Mr. Taylor, showing the number and nationality of laborers. The total number on October 31, 1899, says Mr. Haywood, was 35,987. Of this number, 20,641 were under contract and 15,346 day laborers. Japanese number 25,654; Chinese, 5,969; Portuguese, 2,153; Hawaiians, 1,326; etc.

As to sex and age, the total is thus divided:

Men	33,201
Women	2,534
Minors	252

Statistics as to skilled labor follow:

Number and nationality of all skilled labor on Hawaiian sugar plantations October 31, 1899.

Description.	Americans.	Hawaiians.	British.	Germans.	Portuguese.	Scandinavians.
Overseers	197	114	125	123	188	36
Engineers and firemen.....	73	19	47	32	40	14
Bookkeepers and clerks.....	43	9	31	11	5	3
Sugar boilers.....	10	8	12	23	3	.....
Carpenters	55	45	10	10	30	14
Blacksmiths	10	15	13	8	14	2
Masons	5	3	9	2	12	.....
Painters	2	4	2	1	4	1
Harness makers.....	1	.....	1	2	.....	1
Chemists	9	2	2	6	.....	.....
Total.....	405	219	252	218	305	71

Description.	Australians.	Japanese.	Chinese.	Other nationalities.	Total.
Overseers	6	93	34	10	926
Engineers and firemen.....	5	35	16	.....	281
Bookkeepers and clerks.....	.....	7	4	1	114
Sugar boilers.....	1	5	6	2	70
Carpenters	1	225	31	2	432
Blacksmiths.....	2	42	2	4	112
Masons .....	.....	7	.....	.....	38
Painters.....	.....	2	1	2	19
Harness makers.....	.....	.....	.....	1	6
Chemists.....	1	.....	.....	1	21
Total.....	16	416	94	23	2,019

AMERICAN GOODS IN NEW SOUTH WALES.

I am making every effort to introduce American-manufactured goods into this consular district. A few years ago, no American manufactures could be seen in this city, but now they are displayed in the various shop windows and are well liked.

Some time ago I arranged to have a specimen shotgun sent here, having given the best bank references. A sale of perhaps thirty of the highest priced guns might have been made if the specimen had been sent and had proven to be as represented, but it never came.

At another time I sent an order for about \$1,200 worth of rubber goods to an American firm, but my letter remains unanswered. An order for 500,000 envelopes remains open, because the manufacturers have failed to reply to letters addressed to them. It is decidedly disheartening for consuls who are trying their best to bring American goods to the attention of local business men to find their efforts

fail because of the lack of interest at home. It is all the more discouraging when the main portion of letters received by consuls are inquiries made by these firms, who later fail to second our efforts. Even as it is, the increase in the amount of United States goods sold here is something enormous, but it might be much more. If there is any way of letting our exporters know that consular officers would like to have their suggestions followed up, the consular service would be still more valuable to the business interests of the United States than it now is.

F. W. GODING,

NEWCASTLE, N. S. W., *November 1, 1899.*

Consul.

AMERICAN TRADE WITH AUSTRALIA.

The following report, by the Sydney correspondent of a London trade publication, upon the steadily increasing consumption of American products in Australia should be pleasant reading for our manufacturers:

American competition in the Australian market is steadily increasing. The *Miwera*, of the Australian-Canadian Line, arrived in Sydney Harbor yesterday (September 19), bringing the following as portion of American cargo from Vancouver: Two hundred and forty-eight cases of drugs, mostly patent medicines; 44 cases of typewriters and supplies, 9 cases of dental goods, 40 cases of boots and shoes; 155 cases of machinery, mostly for agricultural and mining purposes; 41 cases of bicycles in parts; 82 barrels of beer, chiefly lager beer; 55 packages of scales, 28 packages of rubber goods, 261 rolls of news paper, 12 pianos, 14 organs, 179 bales of cotton, 5,640 crates of onions, 2,030 sacks of flour, 125 cases of tinned salmon, 91 cases of fencing material, 60 cases of preserved cream, 76 packages of sundries.

With respect to patent medicines, the New South Wales imports show a decline in consequence of the increasing sale of locally manufactured articles. Typewriters remain, as formerly, an American specialty. In dentists' tools and materials, Great Britain and America have at times run each other pretty close. In 1897, the value of the New South Wales imports were:

Country.	1897.		1898.	
United States.....	£6,519	\$31,729.71	£8,541	\$41,564.77
Great Britain.....	4,408	21,457.53	5,919	28,804.81
Germany.....	350	1,703.00	204	992.76

This is exclusive of reexports from the other colonies.

In boots and shoes, the imports were as follows:

Country.	1897.		1898.	
United Kingdom.....	£175,986	\$856,435	£169,931	\$826,968
United States.....	45,047	219,220	71,154	346,279
Germany.....	22,096	107,530	16,024	82,360
France.....	1,885	9,168	1,813	8,882
Austria.....	1,330	6,471	2,582	12,565

These figures show the energetic manner in which American manufacturers are pushing their goods in the Australian market. The American supplies of machinery show a slight increase, chiefly in agricultural implements. In printing papers, the imports from America are increasing and those from Great Britain are decreasing, the figures being:

Country.	1897.		1898.	
United Kingdom.....	£79,202	\$385,436	£65,019	\$316,415
United States.....	59,674	290,427	77,660	377,931
Germany	9,550	46,479	5,470	26,619

In the latter year, Japan entered the field, her initial shipment being valued at £20 (\$97.33). The imports of onions and flour are being used as an argument in favor of a federal tariff on a protectionist basis, both potatoes and flour being Australian staple products.

In view of the increasing trade with Australia, the Oceanic Steamship Company proposes, if the Australian governments will give financial assistance, to build several new steamers, rivaling those of the Orient and Peninsular and Oriental lines, expressly for the trade between San Francisco, Auckland, and Sydney. The cargo accommodations on the vessels at present running are wholly inadequate, and it is reported that the *Alameda*, the next incoming vessel, had to refuse cargo on this account.

LEO BERGHOLZ,

ERZERUM, *November 20, 1899.*

Consul.

RAILROADS AND STREET-CAR LINES IN SIAM.

PUBLIC WORKS.

Nearly all of what can be properly termed public works that exist to-day in Siam have been constructed during the last ten years. Prior to that time, only a few canals, a very few streets, and a limited extent of telegraph line existed in the country.

RAILWAYS.

The construction of railroads began in 1891, although a horse-car line had been started in Bangkok in 1889. The first line of railway was about 15 miles in length, narrow gauge, and running from Bangkok, the capital, to Pak Nam, the port at the mouth of the Menam River. This enterprise is called the Pak Nam Railway Company, Limited, and pays 7 per cent dividends regularly. The second was the Government line, from Bangkok to Korat, a distance of 165 miles. This line, which was begun in 1892 and is standard gauge, is now nearly completed and will cost the Government nearly \$33,000 gold per mile.

All the materials for this line have been manufactured in England, Germany, and Belgium.

A line from Ban Mayee to Chiengmai, a distance of about 400 miles, has been started, and the first division of about 50 miles is under construction. This line will also be standard gauge. No manufactured materials to speak of have as yet been purchased for this line.

A line of meter gauge (39.37 inches) will possibly be started next year, running to Ratburi, 45 miles, and Petchaburee, 73 miles, from Bangkok towards the Burmese frontier. The survey only is completed, and no materials for construction have yet been ordered.

The King has just granted a franchise to Prince Chow Sai to build 70 miles of light railway from the Menam River to the Nakawn Nayoek River, with several branches.

This passes through a rich rice country, where there is a large population. The King has also a railway programme consisting of lines east and west aggregating more than 500 miles of additional railways; but the revenue of the country is not sufficient to carry out all these works at one time. For this purpose, it is not unlikely that the Government may negotiate a loan in the near future.

TRAMWAYS.

A private syndicate in 1887 obtained a concession for street-railway lines in Bangkok. These were built for horse cars in 1889 and changed to an electric-trolley system in 1892. This line is crowded with passengers all day long and pays 12 per cent on the investment. The rolling stock, machinery, and wire for this road have all been bought in America; the rails in Europe.

It is probable that this line will be extended in the near future, and that another similar system will be built.

BANGKOK, *November 2, 1899.*

HAMILTON KING,
Consul-General.

TELEGRAPH, TRANSPORTATION, AND SUPPLIES AT DAWSON.

Vice-Consul Morrison, of Dawson City, on October 12, 1899, writes:

TELEGRAPH LINE.

The Canadian Government telegraph line from Bennett to Dawson, a distance of 600 miles, with a branch to Atlin from Bennett of 75 miles, was completed to Dawson September 27, 1899. The line was commenced early last April and was constructed at a reported cost of less than \$130,000. Connection is made at Bennett with the line of the White Pass Railroad to Skagway, a distance of 40 miles,

messages being forwarded from Skagway by first steamer to Vancouver, thence by Canadian Pacific wire to destination. Rates as now established for the United States range from \$4.35 to \$4.75 for ten words, and from 23 to 27 cents for each additional word. No arrangements have yet been made for the transfer of money by wire.

NAVIGATION.

Navigation on the Lower Yukon River has practically ceased for the season. The latest arrivals were three steamers and one barge, on October 7, from St. Michaels September 1, 1899, with 1,000 tons of general merchandise. Masters report one steamer to follow, being advertised to leave St. Michaels for Dawson September 15, 1899. The up-river boats continue to ply between White Horse and Dawson, but it is expected that within ten days navigation will be suspended. Large quantities of freight, it is reported, will be left over at White Horse until next spring, and some 1,500 tons of goods and merchandise are blockaded at Bennett, owing to the lack of facilities for transportation. It is not thought, however, that there will be any actual shortage in any line of goods, especially provisions, the warehouses of the large companies being filled with supplies of every description.

DAWSON.

Among the latest improvements in Dawson is a large and commodious brick warehouse, erected in the business center of the town, the bricks being manufactured in Dawson from clay found in the vicinity. An effort is being made to establish public schools in Dawson this winter. The local council has passed an ordinance, which has been sent to Ottawa for approval and authority to put into practice. It is understood that a quantity of books and other material are now on the way, and the approval of the ordinance may be expected at any time.

CENSUS.

The work of taking the annual census of Dawson was completed the latter part of September. The population is set down as 4,445 (3,659 male and 786 female) and 163 children under 14 years of age. Of the inhabitants of Dawson, 3,205 are from the United States, 645 from Canada, and 200 from England, the remainder scattering. It is estimated that quite 2,000 people left for Cape Nome district from August 26 to September 26, 1899.

FOOD SUPPLY.

The question of food supplies no longer agitates the community. In addition to ample stocks of canned goods, there is an abundance of fresh beef, mutton, and pork, and plenty of fresh vegetables.

There are also in the markets to-day wild swan, geese, ducks, ptarmigan, grouse, Arctic hare, squirrels, beaver, bear, moose, and caribou. Boots, shoes, and clothing are much lower in price than last year.

FUEL.

Cord wood is now selling at from \$20 to \$23, in 16 and 24 foot lengths, delivered. There is some coal used, an inferior kind of lignite, but not to any great extent; the price at the yard is \$30 per ton of 2,000 pounds.

WEATHER.

The first snow flurry occurred September 28; since then the weather has been clear and fine, the thermometer ranging in the twenties for the minimum and in the forties for the maximum, one day going as high as 53°. On the coldest morning so far, the glass marked 10° above zero. This is not unusual weather for this district; owing to its sheltered position, there is little or no wind, and the cold weather, when it does come, is dry and invigorating.

NICKEL MINING IN ONTARIO.

Under date of November 27, 1899, Consul-General Turner, of Ottawa, transmits clippings* from the Toronto Globe of November 24, to the effect that the Ontario government has issued an order in council which will have a most far-reaching effect upon the industries of the Province, and which may result in the establishment in Ontario of extensive works for the production of nickel, to be used in the building of war ships for the British navy. The government intends to reopen negotiations with the imperial authorities, under which the Lords Commissioners of the Admiralty may obtain an interest in the still unpatented nickel lands of the Province, and by means of their development secure an unlimited supply of nickel for the manufacture of armor plate for war vessels. The order in council also provides for the refining in Ontario of nickel ores produced from lands that may hereafter be patented, and, if necessary to the development of the industry, prohibits the export from the Province of nickel ores and matte.

Concerning the value of the product in recent years, the extract reads as follows:

In the seven years 1892-1898, the quantity of ore smelted and reduced to matte in the Sudbury district was 591,852 tons, and the estimated metallic contents were 29,705,000 pounds nickel and 34,570,500 pounds copper. At the selling price of

*The full text of which has been filed in the Bureau of Foreign Commerce.

matte at the furnaces, which is the form in which it is exported to the refineries, the total value of the nickel product for the seven years was \$3,294,060, and of copper, \$1,302,805, or a total of \$4,596,865. But at the average selling price of the metals during the seven years, the value of the refined metals would be \$10,396,750 for nickel and \$3,975,607 for copper, or a total of \$14,372,357. The total amount paid for wages in Ontario during the seven years was \$1,929,894, and this makes up a large proportion of the expenditure for all purposes in our Province for the production of matte. It is certain that the share of the value of the refined metals distributed outside of Ontario for wages, services, and profits has been not less than \$10,000,000, or about two-thirds of the whole.

The article continues:

The Canadian Copper Company, which obtained a special charter from the Dominion Parliament in 1886, was given full power to sell the produce of its mines in any part of Canada or elsewhere, and to establish treating or smelting works in any Province of the Dominion, as in the interests of the company might be found expedient. No refining works have yet been erected by the company in Canada under authority of the charter, although the president has declared under oath that this was the determination of the company; and all the matte product of the furnaces continues to be exported for refining operations in foreign countries. By an act of the Dominion Parliament, the governor in council may impose export duties "on nickel contained in matte, or in the ore, or in any crude or partially manufactured state, and upon copper contained in any matte or ore which also contains nickel—when exported from Canada—upon such nickel an export duty not exceeding 10 cents per pound, and upon such copper an export duty not exceeding 2 cents per pound;" but the authority conferred by this act has not yet been exercised.

The means to be adopted for securing to the Province greater advantages than are now possessed in the conduct of the industry is deserving of careful consideration, as the largest possible employment of capital and labor in the country which supplies the raw material is a reasonable and just claim. The areas of copper-nickel bearing lands of the Province are extensive, and great portions of them probably remain as the unpatented lands of the Crown. Ore bodies of considerable promise have been discovered this year between Lake Temagami and Lake Temiscaming, 75 miles northeast of the working mines at Sudbury. They are within the same mineral-bearing belt of rocks of the Huronian formation which extends across the country from Lake Huron to Lake Abitibi, on the boundary between Ontario and Quebec. In this extensive tract, it seems probable that large bodies of copper-nickel ores may be found, and before prospecting operations are commenced upon it the public interests appear to require that measures should be taken to assure for the Province a larger share in the profits of the mining industry than is at present attainable.

Commercial Agent Shotts, of Sault Ste. Marie, on November 29, forwards the same information, and says that the effect of the order in his district will probably be to stop all prospecting for new mines, to prevent the working of mines applied for but not yet patented, and to seriously interfere with the early development of the general mineral deposits of the district.

PETROLEUM IN QUEBEC.

A company is being formed to carry on the oil-boring business here in place of the old company (the Petroleum Oil Trust Company). The name of the new enterprise is the Canadian Petroleum Company, and it has commenced business on a very large scale. The managers have laid a pipe line for a distance of about 12 miles and have had landed all the material for building and equipping an oil refinery, which they intend putting up in the spring. They are now engaged in building several large oil tanks, some of iron and some of wood. This company has four wells under way, and it intends to drill ten or fifteen more during the coming year.

Notwithstanding all this outlay of money, there are no more signs of oil than there were five years ago.

The Petroleum Oil Trust Company commenced boring for oil here in October, 1889, and since that time has dug thirty-three wells, varying in depth from 2,500 to 3,800 feet. In all but one, oil has been found, but it seems to be soon exhausted.

I have conversed with several oil experts during the past five years, and they inform me that the sand and gravel here are not suited to oil, and that the dip of the rock is altogether wrong. This, they say, should be about 50 feet to the mile, and it is about 1,000 feet to the mile in most places where wells have been put down in this vicinity.

ALMAR F. DICKSON,

GASPÉ BASIN, *December 4, 1899.*

Consul.

CANADIAN SEA GRASS FOR UPHOLSTERING.

Sea grass is a long, thin grass that grows on the protected flats of the Lower St. Lawrence River, along the south shore of the counties of Gaspé and Bonaventure, in the Province of Quebec, and on the east shore of the Province of New Brunswick. The grass grows from 2 to 4 feet long at Isle Verte and Rimouski. At these places the bottom is hard, and teams drive anywhere on the flats. The flats at Gaspé, Bonaventure, and New Brunswick are generally soft, and the grass grows from 5 to 12 feet long.

Brant, geese, and ducks, as they migrate, stop to feed on this grass. Geese commence to arrive here in March and leave about May 10 for the breeding grounds farther north, returning in September.

The grass is known here as "herbe à bernige" (brant grass) and "herbe à outarde" (wild-goose grass). These flats are very extensive in places. At Isle Verte over 1,000 tons of grass are cut, and 400 tons can be cut at Rimouski. Islands protect these flats from heavy seas. The grass is mown with scythes. It takes a very large area to dry much of it, and it shrinks rapidly in the sun, 100 pounds of the green grass making only about 12 pounds of the dry. If dried quickly with the salt in it, it is very brittle. To season it well requires from three to four weeks. After it becomes dry, showers are needed to take the salt out of it. The dew will accomplish this object, but it takes much longer. Much experience and care is necessary to cure it properly and have it entirely free from salt. When properly dried the grass is strong, elastic, and curly, giving it its value for upholstery. It is largely used by carriage manufacturers.

The grass was first cut in Canada at Isle Verte in 1891. Now, power presses are used to bale it, and from 10 to 15 tons are put in a car.

The amount of the yield in 1898 was as follows:

	Tons.
Isle Verte, St. Eloi, and Cacouna.....	1, 120
Rimouski	163
Seven Islands.....	55
Paspebiac district.....	45
New Brunswick.....	90
Total	1, 473

About 10 per cent of this was used in Canada and the balance went to the United States, largely to Ohio and Illinois, very little being used in the East. As it becomes better known, I believe it will be more popular. It is clean, healthy, elastic, durable, light, and cheap. The average price on the car is \$25 per ton, or \$30 delivered at Chicago or Cincinnati. All but 190 tons were gathered in this consular district. The work is done in about three months. The dealers buy it from the farmers, sort it, press it, and market it.

Last season, the farmers received for their grass from \$15 to \$20 per ton; this season, from \$12 to \$15 per ton. The dealers have also been cutting prices, so that grass has netted only from \$17 to \$20 per ton on the cars here. There will be about twice as much shipped to the United States in 1899 as in 1898. At the present rate of shipment, the amount on hand will be exhausted long before next year's supply will be ready for shipment. Some dealers have thought "sea moss" a better name to sell under than "sea grass," so they have adopted it. It is not a moss, does not grow like it or resemble it in any way.

CHARLES A. BOARDMAN,
Commercial Agent.

RIMOUSKI, November 14, 1899.

SISAL GRASS IN MEXICO.

Henequen; "jeniquen," Spanish; ci, Maya; "sisal grass," commercial term; *Agave sisalensis*, scientific term.

This plant has been in use among the ancient inhabitants of Yucatan from the earliest times. The writer has found it imbedded in the form of cord in the stucco figures that ornamented the façades of the mysterious ruined cities of Yucatan. There are two wild varieties of henequen, called by the natives "cahum" and "chelem." The fiber of these wild plants is used to some extent by the natives in the making of cordage for domestic use, and some claim that hammocks made from the fiber of the cahum are the best.

It is, however, the cultivated plant that furnishes commerce with the fiber known as sisal grass, Sisal being the old port from which the fiber was first exported.

Like the wild plant, the cultivated one is divided into two varieties—the "zacchi," or white hemp, and the "yaxci," or green hemp. The zacchi is considered the finest and best, but the yaxci is a good fiber, and by the time the henequen fiber reaches New York or Boston, it is simply as sisal grass, of a good or medium quality, as the case may be.

It has been generally supposed that sisal grass as an article of commerce has been known only within the last fifty years. This is a mistake.

Between the years 1750-1780, quite a furor was created in commercial countries of the Old World by the discovery that the fiber of a plant found in Yucatan was good for ship cordage. Spain sent over a royal commission to report upon the discovery, and in a few years many of Spain's commercial and war vessels were using cordage made from henequen. For some reason, probably because of the primitive method of preparing it, the use of the fiber gradually declined, until at the commencement of this century the former trade had been forgotten.

In 1847, Yucatan, until then a cattle-producing, cotton-growing, and logwood-exporting country, was in the throes of an Indian war. The Maya Indians had risen in rebellion and had succeeded in driving the white race out of the most fertile portions of the peninsula, forcing them to rely for means of subsistence upon the products of a sterile, rocky belt, too poor to sustain cattle in any numbers. Henequen was the only useful plant that would grow on such a soil. The first plantation, so far as I can learn, was planted in 1848, and the 50 acres planted were cleared by the use of the tonka, the primitive cleaner used by the native Maya. There was a good

demand for the new fiber in ship rigging, and it gradually came into general use, until sisal grass was a well-known article of commerce. The tonka was a piece of hard wood, shaped something like a handsaw, having the end curved in. The leaf of the henequen was drawn through the sharp curve and the fiber was stripped of the thick, pulpy covering. The leaf was subjected to this operation two or three times, until the fiber was left clean and free. This tedious process was not long tolerated. A machine was found to increase the output, but the demand again outgrew the means of supply. Then the machine known as the "raspador," or the "solis," from its inventor, came into use and has held its own almost up to the present day. It consists of a large-toothed wheel that scrapes the pulp and leaves the fiber. Its simplicity made it peculiarly fitted for use by the native servants. Plantations came to be known as plantations of one, two, or a dozen wheels.

The constantly increasing trade necessitated still more rapid means of fiber cleaning. Many new machines were produced, each of which was said by its inventor to be far better than any of the others. To-day, the following machines are in actual use in Yucatan:

Hemp-cleaning machines now in use upon the plantations of Yucatan.

Machine.	Number of leaves cleaned in 10 hours.	Actual horse-power.	Number of men needed.	Cost of machine.		Number in use.
				Mexican.*	United States.	
Lanaux.....	130,000	35	3	\$6,000	\$2,856	6
Prieto	125,000	60	3	7,000	3,332	90
Stephens	150,000	70	3	11,000	5,236	6
Solis.....	9,000	6	2	250	119	1,200
Torroella.....	80,000	30	3	5,000	2,380	20
Villamor	70,000	35	3	6,000	2,856	.....

NOTE.—Compiled from data given me by the inventors themselves or their authorized agents.

* The United States Director of the Mint estimates the average value of the Mexican dollar in 1899 as 47.6 cents.

I give below a table showing the exportation of sisal grass from Yucatan during the ten years ended December 31, 1898:

Year.	Quantity.		
	Bales.	Kilograms.	Pounds.
1889.....	243,968	40,641,521	89,598,207
1890.....	260,106	45,079,423	99,382,006
1891.....	310,090	52,065,024	114,782,552
1892.....	353,525	58,584,813	129,156,078
1893.....	355,123	58,097,925	128,082,685
1894.....	373,883	61,605,695	135,815,915
1895.....	381,504	61,729,584	136,089,041
1896.....	397,163	65,762,910	144,980,911
1897.....	419,975	70,545,153	155,523,844
1898.....	418,972	68,834,268	151,752,027
Total for 10 years.....	3,514,309	582,946,316	1,285,163,448

The Mexican Government requires all weights to be stated in the metric system.

In 1888 and 1889, the price of hemp reached 15 centavos per pound. The cost of production was then about 4 centavos per pound.

Exports of sisal grass from Yucatan during ten months of 1899.

Month.	Quantity.		
	Bales.	Kilograms.	Pounds.
January	52,128	8,735,545	19,258,383
February	21,360	3,506,832	7,731,162
March	58,069	9,621,703	21,212,006
April	43,530	7,075,447	15,598,530
May	30,869	5,015,166	11,056,435
June	31,629	5,133,882	11,318,156
July	26,937	4,296,939	9,473,032
August	26,204	4,202,208	9,264,188
September	44,973	7,456,101	16,427,725
October	35,595	5,695,200	12,555,638
Total for 10 months.....	371,294	63,739,393	140,519,711

Prices during these months have ranged from 15 to 18 centavos (7.1 to 8.7 cents).

It is said that the best fiber-producing plant grows on the poorest and rockiest soil; but this does not accord with experiments made by me, and to my mind is open to contradiction.

One method of planting and cultivating is as follows: The field is first cut and burned off. The burning produces a certain amount of ashes, and many planters set out seed corn at the same time they plant the henequen. The one does not interfere with the other in the least, and the corn crop helps to pay the cost of the henequen.

The henequen plant is propagated, not by seeds, but by scions, or suckers. The plant produces seeds, and in a natural state propagates itself by both seeds and scions; but the planter uses only suckers from 18 to 20 inches high. By this method, he can produce a field of henequen ready to cut within five years, whereas by seed planting he would have to wait from eight to nine years.

Once planted and properly tended—that is, cleared of weeds twice a year and not under or over cut—a field will last twenty years, and instances are not wanting of fields that have lasted longer.

A leaf is ready to cut when it extends at right angles to the trunk of the plant. A healthy, vigorous plant in the maturity of its growth should yield from eighteen to twenty-four leaves. One thousand leaves should produce from 50 to 60 pounds of good, clean fiber. This amount is a fair average.

When the plants in an old field send up a flower stalk, it is nature's signal that the crop is finished. The old plants must then be

clipped of all useful leaves and cut down, to allow the young scions (which should have been already planted between the old plants) ventilation for growth.

Bad cleaning, allowing rot to be produced by the acids nascent in the plant pulp, and dampness produce red and mold-stained fiber, of less than one-half the value of the good, clean, white fiber. This is rarely exported, but is sold at home for domestic use.

In March of last year, the preliminary trials of the machinery in the new cordage factory La Industrial gave satisfactory results. This factory was the first of its class established in Mexico, and its progress has been closely watched.

It is, in the opinion of experts, as completely equipped as any similar enterprise in the United States, and its total cost has reached nearly \$700,000. The machinery is nearly all from the United States, and is of the best and latest pattern. The factory is now working double time in order to fill several very large contracts for binder twine from United States houses.

There are in Yucatan nearly twelve hundred henequen-producing plantations of various sizes. The largest plantation, or perhaps I should say the plantation producing the largest output, is, I think, on the line of the broad-gauge railway between Merida and Progreso. It is called Ticilché, and produces at the time of this report about 1,000 bales, or 375,000 pounds, of cleaned fiber per month.

Prophecies are dangerous, and I venture to make one with diffidence; but I have recently been over the henequen-producing belt and have perhaps as much data as most persons. My belief is that if the maximum production of henequen in Yucatan for the next three years has not already been reached, it will not exceed this year's output by over 10 per cent. Many factors unknown in the United States are of importance here, and parties interested will do well to bear this in mind. I have no henequen interests, and my judgment may be the clearer for that fact.

EDWARD H. THOMPSON,

PROGRESO, *October 29, 1899.*

Consul.

OPPORTUNITIES FOR AMERICAN CAPITAL IN MEXICO.

As none of the Latin American countries are experiencing such steady commercial and industrial progress as Mexico, no other offers so many openings to the miner, planter, capitalist, and manufacturer. Among the many causes of this progress and activity may be mentioned the natural resources of the country, the absolute security of life and property, the cheapness of labor, the absence of

strikes and other labor disturbances, and the confidence in the strength and stability of the Government, which was so openly exemplified by the recent ready negotiation of the 5 per cent loan in the United States and Europe.

One of the most gratifying evidences of the progress of Mexico during recent years has been the constantly increasing importation of labor-saving machinery. The total importation of machinery during the year ended June 30, 1897, amounted to \$3,754,625, while during the next fiscal year it was \$5,439,233, an increase of \$1,684,608, or nearly 50 per cent. New manufacturing plants of almost every description are being built all over the Republic. In no country in the world are cotton mills paying such large dividends on the capital invested, and the magnificent water-power facilities, unused for centuries, are now being utilized. Immense mills were constructed only last year at the falls of Juanacatlan, near Guadalajara. Besides all kinds of cotton goods, Mexico to-day manufactures a very good quality of cassimeres and woolen goods, blankets, stockings, knit underwear, shoes, and all kinds of leather goods, and hats of wool, fur, and straw, blocked in the modern and prevailing style of the country. She is also beginning to make linen and silk fabrics, a determined and somewhat successful effort being made at present to raise the silkworm in the State of Guanajuato. Sugar and alcohol are also manufactured. The establishment of these new enterprises, fostered by the protective policy of the Government, is giving an impetus to every industry and offers to the American manufacturer of machinery a most inviting field. Prices should compare favorably with those of European houses, and arrangements should also be made to allow as long credits as possible, for in almost every instance excellent security will be tendered. The business should be entrusted to men thoroughly conversant with the language and well acquainted with the peculiar customs of the inhabitants and the agricultural requirements of the country. The machinery introduced should be carefully explained to the native farmer. The Mexican is conservative, and when an instrument or tool has been accepted, it is difficult to convince him that another is more meritorious; thus, for the small amount of extra expense to which the manufacturer has been subjected in introducing his wares, he will be doubly compensated in the future extension of his export trade.

Another source of profit to the American machinery manufacturer is the tendency toward municipal improvements, the result of which is the construction of street railways, market houses, and electric-light plants, as well as the introduction of improved drainage systems all over the Republic.

A great deal of American capital has been and is at present being invested in land in Mexico, mostly in coffee and rubber plantations in the more southern States and in sugar properties along the Pacific and Gulf coasts; and in almost every instance, when these have been managed with discretion and have advanced to the stage where profit could be expected, they have met the most sanguine expectations of their owners. In the northern States, however, if we except the flourishing Mormon settlements in the State of Chihuahua, capital has not been as generally invested, although at present there are some most favorable opportunities for investment on a large scale in irrigated sugar and orange haciendas in the southern part of this consular district, along the line of the Monterey and Mexican Gulf Railway. These properties are especially valuable, not only because of their low market price and abundance of water, but because they are situated below the frost line. Farther north, along the Rio Grande, San Juan, Salado, and Marina rivers, there are many thousands of acres capable of successful irrigation, which, in the event of the construction of the contemplated railway along the border, will become immensely valuable. However, as no foreigner is allowed to hold landed property within 20 leagues of the frontier, this privilege will first have to be granted by the Government; but I have been told that, when properly presented, the request is seldom refused.

In the City of Mexico, where several companies are handling city realty, many building and loan associations are established. There is also one in Monterey; but, as a general rule throughout the Republic, if we except the federal capital and one or two other cities, rents do not return a fair rate of interest on the price asked for city realty, except when, in some rare instance, it may be bought at a forced sale.

A very large amount of American capital is invested in mines throughout the Republic and many fortunes are being made. In June, 1892, laws were passed which granted valuable franchises to the person denouncing mines, and a total exemption from the principal taxes for a period of ten years. The encouragement extended to immigration and the liberal laws relative to the mining industry exemplify, as much as anything else, the broad and progressive policy of the Government. Silver mines predominate, and of the entire number existing in July, 1898, 4,050 were silver alone and 1,620 were gold and silver. Of course, investments in mines present a great deal of uncertainty, but this item is reduced to a minimum in the case of those who buy already developed mines of reliable persons. The more attractive offers are being rapidly accepted, while active prospectors are at work in almost every State,

and scores of mining denouncements are presented each month to the Ministry of Public Encouragement. In the States of Oaxaca and Guerrero, especially the latter, there are many sections rich in minerals as yet unexplored and undeveloped, but they will soon be as thoroughly traversed as those of Durango, Sonora, and Chihuahua to-day. The value of the precious metals exported during the fiscal year 1898 was \$75,042,332 (silver currency, equal to \$36,020,319 gold).

The greater number of valuable tracts of timber land is found along the Sierra Madre and in the southern part of the Republic, including the coast line of the Pacific and the Gulf. Here are the valuable commercial dyewoods for which Mexico has been famous for so many years. On the Pacific coast, this line extends along the whole coast south of Manzanillo and on the Gulf south of Tampico. The greater part of the timber cut for commercial purposes is obtained along the rivers south of Veracruz. In this consular district, some ebony and live oak may be found along the Rio Grande, and some fine timber also grows along the Marina and other rivers to the south, but not in sufficient quantities to warrant its exploitation. The northern part of the Republic may therefore be regarded as practically timberless, and perhaps to this cause may be attributed the destructive droughts which prevail. The railroad which is being built west from Chihuahua will open up a very rich timber section.

P. MERRILL GRIFFITH,

MATAMOROS, *November 4, 1899.*

Consul.

TRADE AND INDUSTRY IN COSTA RICA.

In a report which will be printed in *Commercial Relations*, 1899, Minister Merry, of San José, says:

The population of Costa Rica, by the census of 1864, was 120,500, which increased in 1895 to 248,500, and is now fairly stated as approximating 275,000. The following figures are applicable to the fiscal year ended March 31, 1899:

Imports, stated in gold valuation.....	\$4, 258, 896. 04
Exports, stated in gold valuation.....	5, 659, 218. 50

The exports were divided as follows:

Coffee.....	\$4, 209, 569. 15
Bananas	923, 090. 26
Timber and dyewoods.....	345, 439. 04
Precious metals.....	48, 788. 30
Various exports.....	132, 331. 81

The imports of the year 1898 were divided as follows: United States, 44.80 per cent; England, 19.61 per cent; Germany, 15.61 per cent; various, 20.09 per cent.

In the first four months of 1899, the ratio of imports from the United States had increased to 67.25 per cent, owing mainly to the facilities of steam transportation, although it is not pleasant to note that almost exclusively foreign tonnage was employed in this increasing movement of merchandise. The most important imports from the United States consist of flour, machinery, oils, wire and wire fencing, iron pipe, and furniture. The importation of American cotton drilling and prints is also increasing rapidly.

Of the coffee, 56 per cent went to England, 20 per cent to the United States, 16 per cent to Germany, and 4 per cent elsewhere. Of the bananas, about two-thirds were shipped to New Orleans and one-third to Atlantic-coast ports of the United States.

The Costa Rica Railway, from Port Limon to Alajuela, through San José and other principal cities of the Republic, with branches, has a length of 137½ miles. It carried in the year 1898, 601,198 passengers and approximately 160,000 tons of freight. Of this railway, the Government owns about \$400,000 in shares, gold value, and the remainder is English property. It is well constructed with material imported from England. The ties are of iron and practically indestructible.

The Pacific Railroad will have a length of 58.8 miles from San José to the proposed port of Tivives, at the mouth of the Gulf of Nicoya. It is being constructed by American contractors for account of the Government with material (except ties) from the United States. There are now completed 9 miles; additional graded, 25 miles; partially graded, 3.8 miles; not commenced, 21 miles. The road is now using one locomotive (wood burner) and numerous flat cars imported from the United States.

Both railways are 3 feet 6 inches in gauge.

The railway from Limon to the interior, after it leaves about 10 miles of banana lands, ascends rapidly, passing the city of Cartago at 5,000 feet elevation, the capital, San José, being 3,860 feet above sea level and consequently on the Pacific slope. It has been an expensive road to construct and runs through beautiful mountain scenery. From San José to the Pacific the American-built road will run through a mountainous region for about half its length and thence reaches the Pacific over comparatively easy grades, with a maximum of 2½ per cent. Both these roads have, unavoidably, many curves.

It must be remembered that mountainous regions in Central America are not barren, like the Rocky Mountains and Sierra Nevada

in the United States. The rainfall is generally heavy throughout Costa Rica. The mountains are covered to the summits with vegetation, and, except at the summits, with a soil generally rich. There are running streams in every direction, from which, owing to heavy grades, abundant electric power can be developed. It is a beautiful country, and in its elevated region has a healthy climate. The interior is specially adapted to the growth of coffee, which commands a much higher price in European markets than the Brazilian product. The Atlantic littoral is equally well adapted to the growth of bananas of an excellent quality. These two articles are, as may be noted herein, its principal products; the latter increasing rapidly, while the present low price of coffee offers little inducement to an increase of production, although, if the landowner is free of mortgage, there is still a fair margin.

Costa Rica needs a diversification of her products, a point which is now engaging the attention of her Government and agriculturists. An excellent quality of cacao, india rubber, and all classes of tropical fruits for export can be added to the production, while the north-western part of the Republic is well adapted to the cattle industry, the Republic not producing at this time the cattle it consumes. Angora goats might be profitably raised in the mountains, above the elevation suitable for coffee growing. There are also valuable gold and copper mines in the interior of the Republic, this development having but recently commenced with English and American capital.

Costa Rica has excellent harbors on the Pacific, among them Salinas Bay, Port Culebra, and ports on the Gulf of Nicoya. At present, the only one on the Pacific littoral frequently used by foreign shipping is Punta Arenas, connected by rail with the town of Esparta, 15 miles inland, whence there is a good cart road to San José. On the Atlantic, the only seaport of note is Limon, where the Government is incurring comparatively large expenditures for sanitary and harbor improvement. The sum of \$765,098 gold has been thus far expended, which has been paid about half in cash and half in noninterest-bearing bonds, the work being under control of an American contractor. When the projected work has been completed, Limon should be one of the healthiest ports in Central America.

The wharfage facilities being deficient, the English railway corporation is constructing a new steel pier with depth of water for the largest ships. A moderate supply of fuel for steam purposes is always to be had here, the railway company keeping a reserve stock of English patent fuel (compressed coal blocks) for its own service and for shipping.

The town and shipping are supplied with excellent potable water, brought from the hills back of the harbor in iron piping.

Twenty-six steamships monthly now visit Limon, connecting with ports in the United States, Europe, the Spanish Main, and West India Islands. Eight to ten mail steamships (American, English, and Chilean) now call at Punta Arenas monthly, besides transient steamers and sailing vessels, the latter loading principally hard cabinet and dye woods, ores, hides, etc., for Europe.

One advantage that Costa Rica has over other Spanish American republics is the fact that her soil is largely owned by small land-owners, who make their homes there and, as small producers, are interested in a peaceable life. These people are the backbone of the country—industrious, good citizens, averse to revolutions and political excitement. Considering the small area of the Republic and the still smaller population, relatively, Costa Rica has reason to congratulate herself upon her advancement. It needs only the commencement of the interoceanic canal to place her and her sister Republic, Nicaragua (also a country of great natural resources), on the highway of the world's commerce. When that time arrives, both Republics will rapidly and securely advance in the path of material welfare and prosperity.

TARIFF OF SALVADOR.

The customs tariffs of Salvador, as translated by the International Journal, of Brussels, are said, by the Bureau of Foreign Commerce, not to be clear, and questions are asked relating to certain decrees, which are now of no force, other decrees having annulled their provisions. To refer to them would only tend to confuse a subject that at best is not very clear. Practical illustrations will give a more intelligent idea than references to decrees can give.

For the purpose of reaching a proper understanding, it should be stated that the National Assembly (Congress) enacted a tariff schedule (aforos) on the 24th of March, 1888, which has not been changed except by decrees issued by the Executive Power. That schedule is only used for the purpose of a basis to calculate what the duties and surtax are. The published tariff of schedules is misleading, in tending to convey the idea that it represents the sum total of customs duties.

The Executive has the power to change the revenues of the Republic whenever such modification becomes necessary. To meet obligations, a decree is issued; the payment is made by issuing bonds against the custom-house revenues of the Republic, so much per cent on every dollar collected.

The clearance of merchandise through the custom-house is effected by the presentation of a stamped paper to the collector,

making application for registration and clearance of certain merchandise, giving the marks, numbers, and weights, describing the packages and contents, and stating the tax to which it is subject; another sheet, called "liquidacion de la poliza" (apportionment order), is also prepared, which enumerates the manner in which the several taxes are to be paid (as given below) and calculates the amount imposed by each tax upon the article of import.

	Per cent (in silver).
For the Government.....	50
Do.....	*5
Public instruction.....	5
Bank of Salvador.....	5
Bonds:	
London Bank.....	5
Occidental Railway.....	15
French debt.....	6
M. R. Cohn.....	2
Electric Light Company.....	2
English debt.....	5
Salvador	25
Surtax for public improvement.....	30
Total.....	155

To which are added—

	Per 100 kilograms.
Warehouse	\$0. 50
Judiciary (salaries).....	1. 00
Bonds of Central Railway.....	1. 50
Bonds of importation and exportation.....	2. 00
Subsidy to Pacific Mail steamers.....	. 50
Total....	5. 50

The Salvador bonds fluctuate, and are worth to-day 15 cents on the dollar.

The importer must secure the bonds wherever they are held for sale. It will be noted that he labors under great disadvantages.

JOHN JENKINS,

SAN SALVADOR, *October 15, 1899.*

Consul.

Under date of October 31, 1899, Consul Jenkins sends copies of a decree of the Republic of Salvador, whereby a further surtax of \$3 silver (\$1.329)† on each 100 kilograms (220.46 pounds) gross weight

* Or a per cent in gold certificates.

† The value of the Central American peso was estimated by the United States Director of the Mint, July 1, 1899, as 44.3 cents.

is levied upon all merchandise that shall be imported into the Republic after November 1, 1899.

The following articles are exempt from the tax: Steam machinery, hydraulic or hand, for agriculture, plows, etc.; fertilizers, iron cans for balsam, filters and distillers of all classes, rabbit and other skins for the manufacture of hats, looms of all kinds, printing and lithographic inks, prepared chalk for the use of schools.

NEW VENEZUELAN GOVERNMENT.

Minister Loomis transmits from Caracas, November 23, 1899, copies of letters exchanged between himself and the Minister of Foreign Affairs (former President Andueza Palacio) in regard to the recognition by the United States of the de facto Government of General Castro. The letters read:

MR. LOOMIS TO MR. ANDUEZA PALACIO.

LEGATION OF THE UNITED STATES,

Caracas, November 21, 1899.

To His Excellency Dr. ANDUEZA PALACIO,
Minister of Foreign Affairs.

SIR: I beg leave to acknowledge the receipt of Your Excellency's very polite note of October 24, with inclosures, in which I am courteously informed that General Castro is in possession of the Executive Power and that he has an organized Government exercising its functions throughout the Republic.

It gives me great pleasure to say that I have been authorized to enter into official relations with the de facto Government of General Castro, and I venture to express the confident belief that the very agreeable and cordial intercourse which has existed between the Government of the United States and the Government of Venezuela will be continued and strengthened through the medium of the diplomatic association which I hope to have with Your Excellency and his Government.

I take this opportunity to assure Your Excellency of my most distinguished consideration.

FRANCIS B. LOOMIS.

MR. ANDUEZA PALACIO TO MR. LOOMIS.

MINISTRY OF FOREIGN AFFAIRS,

Caracas, November 21, 1899.

MR. MINISTER: I have just informed Gen. Cipriano Castro of the contents of the polite note of Your Excellency, in which you state that you have this day received authority to enter into official relations with the Government over which he is presiding as Supreme Chief of the Republic.

General Castro has been extremely pleased to learn of the cordial expressions of good will which mark the first official communication to the new Venezuelan Government from the Government of the United States, a Republic bound to ours by such natural ties.

It is also a source of extreme satisfaction for me to know that Your Excellency's aim in the future will be that all official intercourse with the ministry under my charge shall be pleasant and harmonious; and to attain this end I myself shall ever earnestly strive.

I avail myself, with the greatest pleasure, of this occasion to renew to Your Excellency the assurances of my most distinguished consideration.

R. ANDUEZA PALACIO.

The new Venezuelan Government, adds Mr. Loomis, was recognized as a de facto Government on November 18, 1899, by Great Britain.

DEMAND FOR LUMBER IN FALKLAND ISLANDS.

I am certain the time has come for American business men to obtain a part of this valuable trade. In lumber, petroleum, corrugated iron for building purposes, nails, flour and meats, lard and condensed milk, canned fruits, and hay, I think we can gain a monopoly. I inclose a letter from the governor, which speaks for itself. I would like very much to be put in correspondence with the proper parties. It will be remembered that this is a free port for all goods except liquors, malt goods, tobacco, and cigars.

Work on the naval improvements here has been suspended, but will be resumed as soon as the engineer in charge returns from England.

PORT STANLEY, *September 13, 1899.*

J. E. ROWEN,
Consul.

SEPTEMBER 12, 1899.

MY DEAR SIR: Will you kindly invite the American consul at Montevideo to ascertain whether the American steamship company which trades between New York and Uruguay would be willing to bring American lumber to this colony?

If they are willing to do so, I shall be glad to hear what quantity of lumber would justify a call at this port and the rate of freight per 1,000 feet from New York to Port Stanley. I shall be glad also if you could obtain for me quotations for pitch and white pine and maple free on board steamer in New York.

Believe me, etc.,

W. GRAY WILSON.

Consul J. E. ROWEN.

TABLE SALT IN URUGUAY.

Consul Swalm, of Montevideo, under date of October 12, 1899, writes as follows to a Western salt company* concerning the importation of table salt in Uruguay:

Table salt comes almost wholly from England and is known as the "Morton" brand, put up in 2-pound bottles, glass stoppered. It is imported in cases of 2 dozen bottles each, which cost here, duty paid, \$1.85 in United States money. The London price is 2s. 8d. (65 cents). This salt retails at 20 cents per bottle, and has a good market. Another kind is imported from Liverpool in bags of 20 kilograms (44 pounds), and costs here, duty paid, 34 cents per 10 kilograms (22 pounds). This salt fills a large retail trade, and is sold in bulk or put into small 2-pound bags and "specialized" by enterprising dealers in that way.

Salt can not be handled here in paper cartons, owing to the dampness of the climate. English merchants have tried this and found glass, or a well-lined tin, the only safe receptacle, glass being preferable.

The duty on this salt is $38\frac{1}{2}$ per cent on a valuation of 5 cents per pound, in cans, jars, or packages, including the weight of the package. Fine, loose salt of all kinds is valued at \$1.35 per 100 pounds, and the duty is $38\frac{1}{2}$ per cent.

It should be borne in mind that the English salt manufacturers have the advantage of an all-sea route, and the choice of several lines of transportation in first-class ships which make the voyage very speedily—unlike the conditions at our ports.

Common salt comes almost entirely from Cadiz.

Statistics of importation are as follows:

Year.	Quantity.		Value.
	Hectoliters.	Buskels.	
1895.....	361,105	1,024.82	\$280,507
1896.....	422,921	1,200.25	211,461
1897.....	334,925	949.71	167,463
1898.....	Average.	.....	Average.

In 1896, England sent 163,625 kilograms (359,975 pounds) of fine salt, of a duty value of \$7,343; in 1897, 60,105 kilograms (132,231 pounds), valued at \$2,302 (the Uruguayan dollar equals \$1.0352). All of this came in bags or bottles.

The general importing houses of Grauara & Co. and Comas, Brunet & Co., of Montevideo, are commended as responsible.

* To which a copy of Advance Sheets has been sent.

COCOA IN PARAGUAY.

Cocoa is one of the most prolific products of Paraguay, growing everywhere without cultivation. The kernels are placed in a machine, and oil is pressed out. From this oil all the soap of Paraguay is made. It is perfectly white and floats on the water.

Very little cocoa has been exported. In 1897, the matter was taken up by the Banca Agricola, and 2,000 sacks of a weight of 97 tons were sold to Knowles & Foster, in Liverpool, bringing a price of £1,094 16s. 1d. Deducting expenses, the bank realized from this operation £938 17s. 9d., or \$4,732 gold.

Paraguayan cocoa seems to bring the best price. Most of the cocoa in the London market comes from Africa, the quotation being £9 10s. to £10 (\$46.23 to \$48.66) a ton; but the Paraguayan product, although little known, brought £11 5s. to £11 10s. (\$54.75 to \$55.96), and was pronounced the richest. Naples has also offered high prices for Paraguayan cocoa, desiring 10,000 tons annually at a price of about £11 (\$53.53).

In Paraguay the kernels cost from \$4 to \$5 an arroba (about 48 to 71 cents gold per 25 pounds).

For gathering the nuts, from 2½ to 4 cents gold per arroba is paid.

Cows frequently eat the pulp from the nuts, leaving the hull inclosing the kernel clean and smooth. A cow, I am told, cleans from 40 to 50 balls a night.

What is most needed is a machine which can remove the pulp and break the hulls without cracking the kernel. A number of machines have been invented for this purpose, but as yet none has given satisfactory results. The Agricultural Bank has tried a French apparatus, but the cost is too great to enable it to be generally adopted. In one part of the apparatus the pulp is removed from the cocoa-nut and this is then passed to another part, where there are three cylinders—one with grooves to hold the cleaned hull, another with longitudinal knife-like projections, and the third with transverse projections.

This machine costs about \$850. What is desired here is a machine costing, say, \$35.

It must be remembered in building a machine that some of the balls are large and others small. The kernel, when cracked, becomes unfit for the market.

JOHN N. RUFFIN,
Consul.

ASUNCION, *October 7, 1899.*

HOSIERY, HANDKERCHIEFS, AND SHAWLS IN PARAGUAY.

The importation of cotton socks and stockings last year was 6,266 kilograms, the duty being 25 per cent per kilogram (\$1.50 gold value per kilogram), and the value of the importation \$9,399 gold. In lisle hosiery, the trade is almost nothing, only 188 kilograms being imported last year, to the value of \$1,128 gold, the duty being 25 per cent on each kilogram (a kilogram being valued at \$6). Cotton socks and stockings come mostly from Germany and are of very ordinary quality. They are packed in cases of 100, 150, and 200 dozen, each dozen being put in a paper box. They sell here for 60, 75, and 90 cents, \$1, and \$1.10 Argentine gold* per dozen f. o. b. Buenos Ayres, on six and eight months' drafts. The colors preferred are cream, black, and stripes. White shows dirt too easily; a few of this color, however, find purchasers.

The usual sizes are Nos. 9, 9½, and 10½.

Many shawls are used in this country; especially in hot weather, because most of the women of the ordinary class go with their arms and necks bare and throw thin shawls around them on going out. The shawls are mostly of a dark color, and the more expensive ones have silky black fringe. They are also used as mantillas. The importation of shawls amounted last year to \$23,552 gold, the quantity in kilograms being 7,360. The duty is 25 per cent per kilogram, each kilogram being valued at \$3.20 gold. The shawls come from Germany, the price being \$2 and \$2.40 Argentine gold each f. o. b. Buenos Ayres. They are packed in cases containing 5 or 6 dozen.

Handkerchiefs are widely used here, being frequently employed instead of shirts and collars. A large handkerchief—usually white or of cream color—is tied around the neck, the bow covering the breast. The importation of handkerchiefs last year amounted to \$12,400 gold, the number of kilograms being 8,267; the duty is 25 per cent per kilogram, and each kilogram is valued at \$1.50 gold. They appear to be of Scotch and Lancashire make. They are packed or shipped in cases of 200 and 300 dozen. Handkerchiefs with borders printed in flowers and dots sell well. This trade could be made profitable.

Much of the above information was furnished me by Mr. Enrique Plate, who represents some of our largest American houses.

JOHN N. RUFFIN,

ASUNCION, *October 5, 1899.*

Consul.

* The value of the Argentine dollar is 96.5 cents.

ALLEGED BUBONIC PLAGUE IN PARAGUAY.

The outbreak of the alleged bubonic pest in Paraguay has been traced to the death in Asuncion of two Portuguese firemen, who came direct from Portugal about four months ago. The death of the two men was out of the usual order, but was attributed to a condition arising from bad food used on board ship. No post-mortem examination was made, and the deaths were reported as of the usual type of typhus heretofore met and successfully dealt with.

Toward the latter part of August, the disease appeared among a company of troops in barracks in Asuncion in such a way as to create a doubt as to its character, and the sanitary authorities set about the work of more thoroughly cleansing the barracks and town prisons.

The Paraguayan officials were frank enough to express their doubts as to the disease and to invoke the best judgment of their local medical world, which included French, Spanish, German, English, and American physicians. It was found that the pathological conditions corresponded quite closely with those of the bubonic plague, and it was deemed wise to adopt the theory that it might be the dreaded pest.

The Argentine authorities took up the matter with great diligence, followed by the Brazilian, who closed the Matto Grosso outlet absolutely. All commerce from Paraguay has been stopped, and cargoes for Buenos Ayres or Montevideo have been turned back to Paraguayan ports, there to be discharged and vessels and crews fumigated in the most thorough manner. The Argentine authorities have made the amplest sanitary preparation for the work, and have established a sanitary cordon covering the entire river front on the Parana, the Upper Parana, and the Paraguay rivers, using a number of torpedo boats for the purpose.

Paraguay sends down the river a great many hides, the chief port of export being Asuncion, and they find their way to Buenos Ayres and Montevideo and thence into the hands of exporters. The hides are deemed excellent means of carrying infection of all kinds, and, should the pest continue, special care will be required in their reception at these ports. These Paraguayan hides are very largely taken for the Spanish market, but the major part of this product is not shipped through Montevideo.

Paraguay is such a healthful land, and fevers and infectious diseases are so little known there, that it is hoped that even should this be the real East Indian plague, it will appear in a mild and less contagious form. At all events, the Paraguayan authorities are to be commended for the thoroughness with which they acted. It is a

calamity to their business interests, and they are richly entitled to the sympathy of the friendly world.

The disease was yesterday officially declared by the Argentine specialists to be the true bubonic plague.

ALBERT W. SWALM,
Consul.

MONTEVIDEO, *October 8, 1899.*

Consul Ruffin writes from Asuncion, October 5, 1899:

Business in Paraguay is paralyzed by the prevalence of what is supposed to be the bubonic plague. Argentine and Brazilian ports are shut against the country. Nothing in the form of hides, tea, fruits, or eatables can go out. The banks here will not sell gold under any circumstances. There are very few deaths—about two per day.

NOTES.

Railway Projects in Yucatan.—Consul Thompson writes from Progreso, November 26, 1899:

By reason of the present high price of sisal hemp, the principal product and article of export for this district, Yucatan is enjoying a season of great prosperity. There is a plethora of money. Many commercial and other schemes are being projected, particularly in railroad and kindred enterprises. Every one of the present railroad companies is commencing to purchase large quantities of rolling stock, rails, etc. Several new railroads are planned, with every prospect of success. I have helped divert many orders to the United States, and if our manufacturers interested in this class of supplies care to enter the field here, there will never be a better chance. That they may be placed in immediate communication with their possible future customers, I give below a list of the various companies that are purchasing or intend to purchase heavily of materials in their respective lines: Merida á Peto Ferrocarril, Rodulfo Canton, president; Merida á Progreso Via Ancha, Joaquin Peon, president; Merida á Tamal, Joaquin Peon, president; Merida á Valladolid Via Angosta, Gen. Francisco Canton, president; Sud Oriental de Yucatan, Rafael Peon y Losa, president; Electric Light Company of Merida (Compañía de Luz Electrica de Merida), Rafael Peon, president. Other companies and projects are in process of formation, and as they become of interest to our merchants and manufacturers, I will give the Department due information.

Fire in Guayaquil.—Vice-Consul-General Reinberg, of Guayaquil, on November 30, 1899, reports that on November 27 a fire broke out in the center of the city and within a few hours an entire block, comprising some of the most important public buildings, was destroyed. These included the theater, the San José Church, the San Vincente College, and the main office of the custom-house, in the warehouses of which were stored upwards of \$500,000 of merchandise; there were besides several stores and private residences, and it is estimated the total loss will pass \$1,000,000. None of the buildings and only an insignificant part of the merchandise were protected

by insurance. Only by extraordinary exertions was the fire confined to this block. Mr. Reinberg adds:

Nearly all Guayaquil edifices are of pitch pine, and the water supply is defective. The members of the municipal fire brigade, aided by steam fire engines (the best of which are American), distinguished themselves by preventing a repetition of the memorable calamity of 1896, when in less than twenty-four hours eighty-three blocks of the best part of the city were swept away. The loss of the statistical information which was on file in the custom-house (and was especially valuable when this consulate-general was called upon for information of a commercial character) will seriously affect the completeness of future reports. There is some talk of replacing the old-fashioned hand machines with steam fire engines, a water tower, etc., and, in view of the serious menace to property interests, it is probable that steps may be taken, and perhaps the superior merits of American appliances will be borne in mind.

Industrial Enterprises in Uruguay.—Under date of Montevideo, November 10, 1899, Minister Finch informs the Department that the Uruguayan Government is undertaking various enterprises with the view of providing employment and anticipating better times. Among these projects is the construction of port works at Montevideo,* the erection of a new Government building to cost about \$800,000, and the building of a railroad line, particulars of which Minister Finch states will soon be forwarded to the Department. Electric traction is proposed for Montevideo by an English company, which owns the best street-railway franchises there. This company has made a proposition to reduce its fares and to give the city \$40,000 in cash for the privilege. Thus far, the offer has not been accepted.

Minister Finch thinks American capitalists, if properly represented, could obtain privileges in Uruguay, owing to the fact that the Government is favorably inclined towards American enterprise.

Phylloxera in Cape Colony.—Consul-General Stowe writes from Cape Town, November 2, 1899:

The Parliament of this colony has issued a paper showing that the amount of compensation paid for the destruction of vineyards on account of phylloxera has been \$97,845.85. The amount paid

* See CONSULAR REPORTS No. 228 (September, 1899), pp. 41, 176; No. 229 (October, 1899), p. 261; and No. 230 (November, 1899), p. 470.

for inspection of vineyards and attempted destruction of phylloxera has been \$301,679.20, and the amount spent on the introduction of American vines and all subsequent expenses connected therewith \$431,867.81. It has been found that American vines transplanted into the soil of this country are free from the ravages of phylloxera. Over \$35,000 have been spent in assistance to grape growers and for premiums on "fruit grown on American vines." On native vines various compounds, in which sulphate of copper is an ingredient, have been used, but with little success. I am pleased to see, however, that "Knapsack" and "Bucket" and "Barrel" spray pumps manufactured in Ashland and Salem, Ohio, are being introduced for spraying vines and fruit trees, and have met with success. The demand is bound to increase, as spraying will become more necessary and general. The diseases of fruit trees in South Africa are caused by bacteria, by fungi, and by insects.

American Goods in the Straits Settlements.—Consul-General Moseley, of Singapore, under date of November 9, 1899, states that Messrs. Katz Brothers have introduced American lard into that market and are selling it in 10-pound tins at 24 cents a pound—quite a large reduction from the usual retail price. The same firm has also received, in the last few days, a large stock of assorted canned American fruits, vegetables, and meats; also American buggies. Mr. Moseley adds:

I am doing all I can to have American goods brought into this market. Our manufacturers of bicycles are represented here by active traveling men, who are placing the wheels in every city and town and village in this section. If other American houses will display the same energy, the trade of the United States here will be largely increased.

Beet Harvest in Russia in 1899.—Consul-General Holloway, of St. Petersburg, on November 22, 1899, writes:

The department of unassessed taxes and Government sale of liquors has compiled a preliminary statement concerning the outlook for the beet harvest and its quality in 1899, based on information furnished September 1-13, 1899, by the excise collectors, which places the harvest of beet in European Russia during the present year at 7,026,513 tons, against 6,182,394 tons in 1898. Of that amount, the southwestern region will furnish 3,918,173 tons; the central, 2,267,218 tons; and the Vistula region, 841,122 tons. An increase of 13.7

per cent is expected: In the southwestern region, 12.8 per cent; in the central, 18.6 per cent; and in the Vistula, 5.7 per cent. The average harvest per acre in European Russia amounted to 7 tons, against 6 tons in 1898. The quality of this year's crop is below that of last year in three-fourths of the area in beet roots.

Export of Watches to Russia.—Vice-Consul-General Hanauer writes from Frankfort, November 18, 1899:

During late years, Warsaw has become the center of the watch trade in Russia. The dealings between foreign and Russian merchants are consummated there, these parties meeting once a year for the transaction of business in this line. At this time, the Russian buyers from Moscow, Tula, Sarataw, and Siberia give orders for the next twelve months and settle for past purchases. This trade is quite important. A few Geneva watch-making firms sell over 1,000,000 rubles' worth here annually. Swiss watch manufacturers purpose now to establish an extensive depot of goods in their line at Warsaw, to increase the sales and monopolize the Russian watch market. They have applied to the Swiss consul in Warsaw to furnish them detailed information. Our export associations would do well to obtain similar data from our consuls.

Police Protection in Marseilles: American Patrol System.—Consul Skinner, of Marseilles, under date of November 23, 1899, says:

Frequent criticism of the night police service of this city has been followed within the past few days by the partial application of a new system of patrolling the streets. Until now, the rule has been for two officers to cover each beat together; but as there are less than 150 men available for the service in a town of over 500,000 inhabitants, it frequently happened that policemen were far away when most urgently needed. As a partial remedy, it is now arranged that each man shall have his own beat, meeting his neighbors at regular intervals and calling for assistance, when it is required, by a set of whistle signals. In the existing state of public sentiment, it occurs to me that this would be an opportune moment to suggest to the municipal authorities the many advantages of the American patrol-wagon system, with electric police calls scattered about the city. I am inclined to believe that a proposal to reorganize on American lines would be well received, and at all events it could do no harm

to make the effort. Correspondence should be in the French language and addressed to Monsieur le Maire de Marseille, Hôtel de Ville, Marseilles. The assistant mayor charged with matters relating to the police is Fortuné Joseph Ambard, 58 Boulevard de la Corderie.

Labor in France.—Consul Atwell writes from Roubaix, December 7, 1899:

At the meeting of the labor committee in Paris on December 6, it was decided that eleven hours should constitute the length of the labor day for men, women, and children. The resolution was also adopted that three years from the promulgation of the eleven-hour law, the time should be reduced to ten and one-half hours, and six years thereafter to ten hours. For the past month, strikes have been going on in the different spinning, weaving, and dyeing establishments of Roubaix-Tourcoing. In some cases, the demands of the strikers have been granted; in others, the laborers have resumed work under old conditions. Some factories have been compelled to close temporarily, as, in view of the high price of raw material, it was found impossible to accord the increase in wages demanded. There are daily parades of strikers in the streets, without hostile demonstration.

Household Schools in Liege.—Consul Winslow sends the following from Liege, November 27, 1899:

There are in the city of Liege ten free household schools, five of which were founded in 1890 and the others in 1898. Nine of these are evening schools, lasting two hours on four nights of each week during the school year. These evening schools are attended by girls from 12 to 13 years of age, who have finished their elementary course in the day schools.

One day school is attended by the girls of the sixth school year in the public schools, divided into groups of twenty-four, each group attending a week at a time. Each group forms four divisions of six pupils each, who undertake the different tasks, such as cooking, mending, washing, etc. The authorities intend to open three more day schools during the school year 1899-1900. There is talk of connecting a household school with each elementary school.

The branches taught in these schools are cooking, washing, mending, hygiene, household economy, and, in fact, everything relating to housekeeping. Of late, the care of little children has been added. These schools are founded and maintained by the city, with the aid

of Government, which pays from 40 to 60 per cent of the expense. The term lasts from the 1st of October until Easter, when the pupil gets a diploma. From Easter to the last of July the courses are attended by the higher classes for four weeks—a week at a time, in order not to interfere with their ordinary studies.

Regulations of Belgian Fish Trade.—Consul Roosevelt transmits from Brussels translation of a royal decree forbidding trade in fish, fresh or preserved, which has been mixed with matters other than spices, condiments, aromatic jellies, the principal ingredient of which is gelatin or gelose, or substance produced by glazing, unless a plain label shall indicate the nature of the foreign substance used. Conserved products must have a label showing the kind of fish, and also, if necessary, the kind of oil, etc., used. Fish, shellfish, etc., caught with Indian berry (*Cocculus indicus*) or other poisonous substances, and those mixed with antiseptics, are declared injurious. No substances injurious to health are allowed to be used. Receptacles containing fish must bear the name and address or the mark of the maker or seller. It is further forbidden to sell or keep in the same premises with food products fish not intended for alimentary purposes, unless these are clearly marked "not eatable" or the like. The full text of the law has been transmitted to the Department of Agriculture.

Motor-Carriage Exposition at Berlin: Correction.—Consul-General Mason, of Berlin, under date of December 7, 1899, calls attention to a misprint in his report on the "International motor-carriage exposition at Berlin."* In the paragraph which begins "The bed of the vehicle is so constructed," etc., instead of "the motion drives the carriage," it should read "the motor drives the carriage."

Grain and Grass Crops of Thuringia.—Consul Hughes, of Coburg, under date of October 18, 1899, reports that the grain and grass crops of Thuringia in the past season have been large and of good quality. As many as three, and in some favored spots four, crops of clover and grass have been cut off the same land, the red-top clover being the best the consul says he has seen in that part of Germany. He warns exporters not to ship hay, etc., on commission, as the present supply is large.

*CONSULAR REPORTS No. 231 (December, 1899). 520.

Opening for American Coal in Canary Islands.—Consul Berliner writes from Teneriffe, December 9, 1899:

There is a very good opening for Pocahontas coal here at the present time. The ruling price of Welsh coal for the coming year seems to be 16s. (\$3.89) per ton, which, with freight from 8s. 6d. to 9s. 6d. (\$2.07 to \$2.31) per ton from Cardiff, would bring the total cost to about \$6 per ton delivered here. More than 200 steamers at Las Palmas and 162 at Teneriffe took coal during November, 1899. Many of these received only half of what they desired, and a number got none at all, as the supply was not sufficient. In conversation with dealers and steamboat captains and engineers, I find that many prefer the Pocahontas coal to the Welsh, and I have no doubt a very profitable trade in this fuel could be established.

German-Uruguayan Commercial Agreement.—Consul Swalm, of Montevideo, under date of October 24, 1899, calls attention to the ratification of the treaty between Uruguay and Germany. The act is in the nature of reestablishing the treaty of 1892, which was denounced in 1897. According to the terms of the agreement, the citizens and the products of each country receive the most-favored-nation treatment in the other country, except that Uruguay is permitted to make commercial arrangements with the countries adjoining for products that do not compete with those of German origin.

German-South American Steamship Service.—Under date of November 17, 1899, Consul Caples, of Valparaiso, informs the Department that the Kosmos German Steamship Company will hereafter dispatch a steamer from Hambürg and Antwerp monthly to San Francisco, Cal., touching, among other ports in Europe and on the east coast of South America, at Valparaiso, Iquique, Callao, Guayaquil, Corinto, La Libertad, Acajutla, San José de Guatemala, Champerico, and probably at other intermediate ports, carrying passengers and freight.

New Guatemalan Steamship Service.—Consul Jenkins writes from San Salvador, November 25, 1899, that the Deutsche Dampfschiffahrts Gesellschaft Kosmos, a line of German steamers running monthly between Hamburg and San José de Guatemala, has announced to the public that in and after the month of December,

a semimonthly service will be established between the above ports; in addition, a monthly service between San José and San Francisco, Cal., and intermediate ports, calling at San Diego and making connections with the Santa Fé Railway. The following are the dates of sailing for San Francisco: *Tanis*, December 2, 1899; *Volumnia*, January 2, 1900; *Ammon*, February 1, 1900; *Octavia*, March 14, 1900; *Luxor*, April 12, 1900. These steamers, adds the consul, have been running monthly on the coast for some time.

Cable to St. Helena.—Consul Pooley, of St. Helena, on November 23, 1899, writes that the submarine cable from Cape Town has been laid to that point, the steamship *Anglia*, with the cable on board, having arrived and the end having been landed the same day at Ruperts, in a valley adjacent to Jamestown. The consul adds:

The present cable tariff via Cape Town to England is 7s. (\$1.70) per word; but on completion of the line the rate will be 4s. (97 cents) direct to England, and I presume an additional shilling (24 cents) to the United States.

Government Beef Monopoly in Colombia.—Consul-General Gudger writes from Panama, November 21, 1899:

A decree has been promulgated by the Colombian Government making the slaughtering of cattle and the sale of meat a Government monopoly. It prohibits all owners of cattle from selling meat except to employees of the Government, under a penalty of \$100 for each head sold. Rules and regulations are to follow later. The reason for this step is the necessity for an increase in revenue. It is supposed that the order will go into effect at an early date.

Some Americans have complained to this office that the enforcement of the decree will have the effect of partially, if not entirely, confiscating cattle in their hands.

Duties in Martinique.—Vice-Consul Testart, of St. Pierre, on November 15, 1899, transmits translation of a notice which has lately appeared in the custom-house of that town, providing that foreign goods imported into the colony through France, in order to benefit by the minimum tariff, must be accompanied by (1) a certificate of origin, delivered by the French consul of the country where the goods originate; (2) a certificate from the French custom-house,

showing that the goods arrived directly from the country of origin. This, adds Mr. Testart, applies altogether to goods received from the Continent. So far, those imported from the United States—except a few articles, such as provisions and food stuffs—have to undergo the maximum tariff rates.

Venezuelan Customs Decrees: Cattle Exports.—The Department has received from Minister Loomis, of Caracas, under date of December 6, 1899, copies of recent customs decrees, one abolishing the law increasing the import duties 20 per cent, passed by the last Venezuelan Congress, and also the Executive decrees of June 17 and June 21, 1899, and imposing duties on foreign merchandise according to the tariff which was in force until August 31, 1899;* the other imposing a duty of 10 bolivars (\$1.93) per head on cattle exported.

Consul Goldschmidt, of La Guayra, in transmitting information relative to the last-named decree (under date of December 6, 1899), adds:

As nearly all the cattle exported from Venezuela go to Cuba or Puerto Rico, the matter is of some importance to the United States. It seems to me that steps might be taken to send American cattle to these markets; the demand in Cuba is quite large. The cattle of this country are of about the same breed as the Texas longhorn, but not quite so meaty; it is rare to come across a piece of beef with any fat. I think that our cattle, if imported into Cuba for breeding purposes, would improve the breed there.

Duties on Tobacco in Venezuela.—Under date of November 26, 1899, Consul Plumacher, of Maracaibo, sends translation of a decree fixing the tariff on tobacco imported into Venezuela as follows, per kilogram (2.2046 pounds):

Articles.	Duty.	
	Bolivars.	
Cigarettes:		
Rolled in tobacco leaf.....	12.00	\$2.31
Rolled in paper or corn leaf.....	6.00	1.15
Cut tobacco.....	6.00	1.15
Ready-made cigars, in any form.....	12.00	2.31
Chewing tobacco or twisted.....	1.50	.289
Cut tobacco, for cigarettes.....	.90	.173
Cut paper, for cigarettes.....	.75	.144
Same paper, for cigarette rollers.....	1.50	.289

* See "Change in Venezuelan tariff," *post*, p. 266.

Change in Venezuelan Tariff.*—Consul Plumacher, under date of November 16, 1899, from Maracaibo, sends a newspaper clipping to the effect that the National Executive has abolished the tariff of 1899 and declared the tariff of 1897 in force again, with the exception of paper for the manufacturing of cigarettes, which shall now pay 75 centimes (14.4 cents), and bobbin paper, which pays 1.50 bolivars (28.9 cents). Bobbin paper is used in machines for cigarette making. The object of this tax is to protect the people employed in making cigarettes by hand. The new tariff came into effect November 7.

New Duties in Venezuela.—Minister Loomis telegraphs from Caracas, January 6, 1900:

Venezuela to-day imposes extra emergency duty on many articles—flour, 1½ cents per pound; butter, 6 cents; etc.

Change in Venezuelan Mining Laws.—Consul Plumacher transmits from Maracaibo, under date of November 27, 1899, translation of a decree abolishing the resolution of October 20, 1898, as not in accordance with the mining code which prescribes the exemption of duties on machinery and articles imported for the exploitation of mines.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
C. M. Dickinson, Constantinople.	Dec. 2, 1899	Dairying	Department of Agriculture.
R. A. Moseley, jr., Singapore.	Nov. 9, 1899	do	Do.
H. A. Johnson, Venice.....	Nov. 23, 1899	do	Do.
D. Mayer, Buenos Ayres...	Nov. 15, 1899	do	Do.
A. A. Winslow, Liege.....	Dec. 8, 1899	Dairying (supplementary report).	Do.
E. Schneegans, Saigon.....	Oct. 24, 1899	Rice market.....	Do.
W. F. Grinnell, Manchester.	Dec. 14, 1899	Mortality rates of English cities.	Marine-Hospital Service.

*See "Venezuelan customs decrees," *ante*, p. 265.

FOREIGN REPORTS AND PUBLICATIONS.

Mining and Railways on the Gold Coast.—According to a British colonial report, the mining industry on the Gold Coast is largely on the increase, and, although the year 1898 was employed chiefly in the development of the mines, some work resulting in immediate profit has been done. Several companies have been started with the intention of commencing mining operations, and the promoters are not only experienced men with scientific knowledge, but are also possessed of the necessary capital to undertake the work with success. The report continues:

The gold industry of this colony is likely to prove one of its most solid and valuable assets. Experts who have gained experience in the Transvaal gold fields assert that the banket reefs in this colony are not only similar to, but of higher grade than, those in the Transvaal. In the western province of this colony it is estimated that there are about 20 miles of banket formation, and if this land were treated in the same way as similar land is in Johannesburg, it is thought it would contain 13,000,000 tons of banket reef, from which about £40,000,000 (\$194,660,000) worth of gold could be extracted by ten years' operations with 1,350 stamps and the cyanide process, yielding an annual profit of fully £1,250,000 (\$6,083,125). This would necessitate an initial investment of £2,000,000 (\$9,733,000), and the area of land would allow forty companies to work, each returning a profit of £3,000 (\$14,600) a month, provided the necessary capital was put in.

It will be impossible for any of the mines to be worked at the profit above mentioned until the railway in course of construction is completed, and this is felt by most of the companies, who are simply waiting for the completion of the railway to commence operations on a large scale. At present, the cost of transport ranges from £18 to £50 (\$87 to \$243) per ton, and the impossibility of getting suitable stamps and other machinery prevents the proper working of the mines. This serious obstacle would disappear with the opening of the railway.

Notwithstanding the great difficulties which have to be contended with at the present time, in consequence of the inadequacy of the machinery, it will be of interest to know that one mine in the Wassaw district had an output in 1897 of 6,880 ounces 14 pennyweights, which realized £27,757 (\$135,078); and in 1898, the same company had an output of 4,433 ounces, realizing £17,588 (\$85,591); another company in the same district had an output in 1898 of 4,368 ounces, realizing £16,480 (\$80,199).

In regard to the railway, the report says:

The work on the first railway in this colony—viz, the line from the coast to the mining district of Tarquah—was commenced during the year under review. The work during the year has been largely of a preliminary character, and, apart from survey, has been principally confined to the neighborhood of Secondee, which is the starting point of the line, and where the works are relatively heavier than at any other point.

It appears that 10 miles of the railway were permanently staked by the first of 1899, and the route was located for a farther distance of 20 miles. The line was cleared ready for earthwork for a distance of 5 miles, and permanent culverts in masonry have been completed for the first mile.

In addition to this line of railway, the Government has had surveys made for roads between Akkra and Insuaim, between Akkra and Appam, between Appam and Insuaim, between Insuaim and Kumasi, between Tarquah and Kumasi, and between Akkra and Kpong. The first five will tap the mining districts, and that from Akkra to Kpong will open rich oil and cocoa producing districts and gather up the trade which comes down the Volta from the interior.

American Trade with Angola.—A British Foreign Office report on the trade of Angola in the years 1897 and 1898 (annual series No. 2363) says that the chief countries contributing to the imports of Angola are, in their order of importance, Portugal, Great Britain, Germany, the United States, France, and Belgium. The United States sends principally flour and petroleum, with a shipment of coal, in 1898, valued at \$5,400. Portugal sends food products, wines, clothing, tobacco, etc.; Great Britain, cotton goods (to the value of \$447,000 in 1898), powder, provisions, coal, ironware, etc.; Germany sends guns, powder, sugar, provisions, machinery for agriculture, ironware, etc.; France, guns, butter and its imitations, wines, and spirits; and Belgian imports consist almost solely of guns for the use of the natives. Machinery and ironware, continues the report, have already been imported in some measure from America, and it is only a question of time when the United States will enter the field with the United Kingdom and Germany in other classes of imports. There is already a representative in Angola of an American engine manufactory, who, in addition to the wares he is actually commissioned to sell, seeks an outlet for other goods of American make.

Mining Industry of Rhodesia.—The British Board of Trade Journal, in its edition of November, 1899, says:

At the third annual general meeting of the Rhodesia chamber of mines in Buluwayo over a year ago, the president, Dr. Sauer, said that while he was unable to give statistics of all the mines, the work done on four of the principal ones amounted to 20,350 feet of sinking and driving, 155,000 tons of ore in sight, and 120 stamps under erection or in transit. He further expressed the hope that in another year he would be able to announce an output which, up to that time, had

been impossible, owing to the war, want of railway communication, and many other causes.

The *Natal Mercury*, of August 25 last, states that, at the fourth annual general meeting of the chamber recently, Dr. Sauer was able to fulfill his promise. Regular monthly returns were started in September of last year, and since that date, up to the end of June last, 100,506 tons of ore have been treated, yielding 54,291 ounces of gold, worth £192,679 (\$937,672). As compared with the Rand mines, this is, of course, very unimportant; but the total output has come from a very few mines. The Geelong produced 11,370 ounces of the total; the Dunraven and Bonsor mines, 21,377 ounces between them; and the Salukwe, 12,744 ounces. The majority of the mines have not yet reached the producing stage, but those that have are giving results that are regarded as highly favorable. The average return from the mill only is 11.63 pennyweights, equal to £2 2s. 5d. (\$10.32) per ton, against 6.51 pennyweights of the value of £1 7s. 3d. (\$6.63) on the Rand.

On the whole, the report was distinctly encouraging, as showing that there is not only gold in Rhodesia, but that the mineral resources of the country are being developed on sound lines. Progress can not, however, be very rapid until further railway extension takes place along the main gold belt, but that extension is now going on, and when completed Rhodesia will probably show up better than it has hitherto done as a gold-bearing country.

Congress of Colonial Sociology at Paris.—The *Revue du Commerce Extérieur*, of Paris, in its edition of November 11, 1899, announces that an international congress will be held during the exposition at Paris in the year 1900, to consider moral and social questions connected with colonization. The general theme will be the duty imposed upon colonizing powers by colonial expansion, in regard to the native population. The programme will cover the political, moral, and material condition of the natives; their situation from the standpoint of civil and commercial legislation; native property; measures to insure the preservation of the race, to prevent its degeneration, to ameliorate its conditions of existence, etc.

Railway in Turkestan.*—The *Gazette de Turkestan*, an official organ, has a very important announcement. The Russian Government has granted to a Danish company the concession for the projected railway from Orenbourg to Tackent. This concession will give Turkestan a railway line, which, in the opinion of those who understand the actual needs of the country, is indispensable to its complete development. The same journal announces that regular service on the branch road of Petrovsk-Baku will soon be given. These localities will thus be connected with St. Petersburg by an uninterrupted railway line 2,383 kilometers (1,500 miles) in length.

* From the *Revue du Commerce Extérieur*, Paris, November 11, 1899.

Opening for Agricultural Machinery in Peru.—From the Board of Trade Journal, London, November, 1899, the following paragraph is taken:

The German consul at Cuzco reports that there exists in Peru a good demand for agricultural machinery suitable for small concerns in the interior of that country. These machines, he says, have to be arranged in small sections in order to enable them to be made up in packages not over 165 pounds English for transportation on mule back. Manufacturers should say in their lists whether the respective machines are suitable for mule transportation or not, and give exact weights of the different sections. This is a point of great importance and can not be sufficiently impressed upon manufacturers' minds.

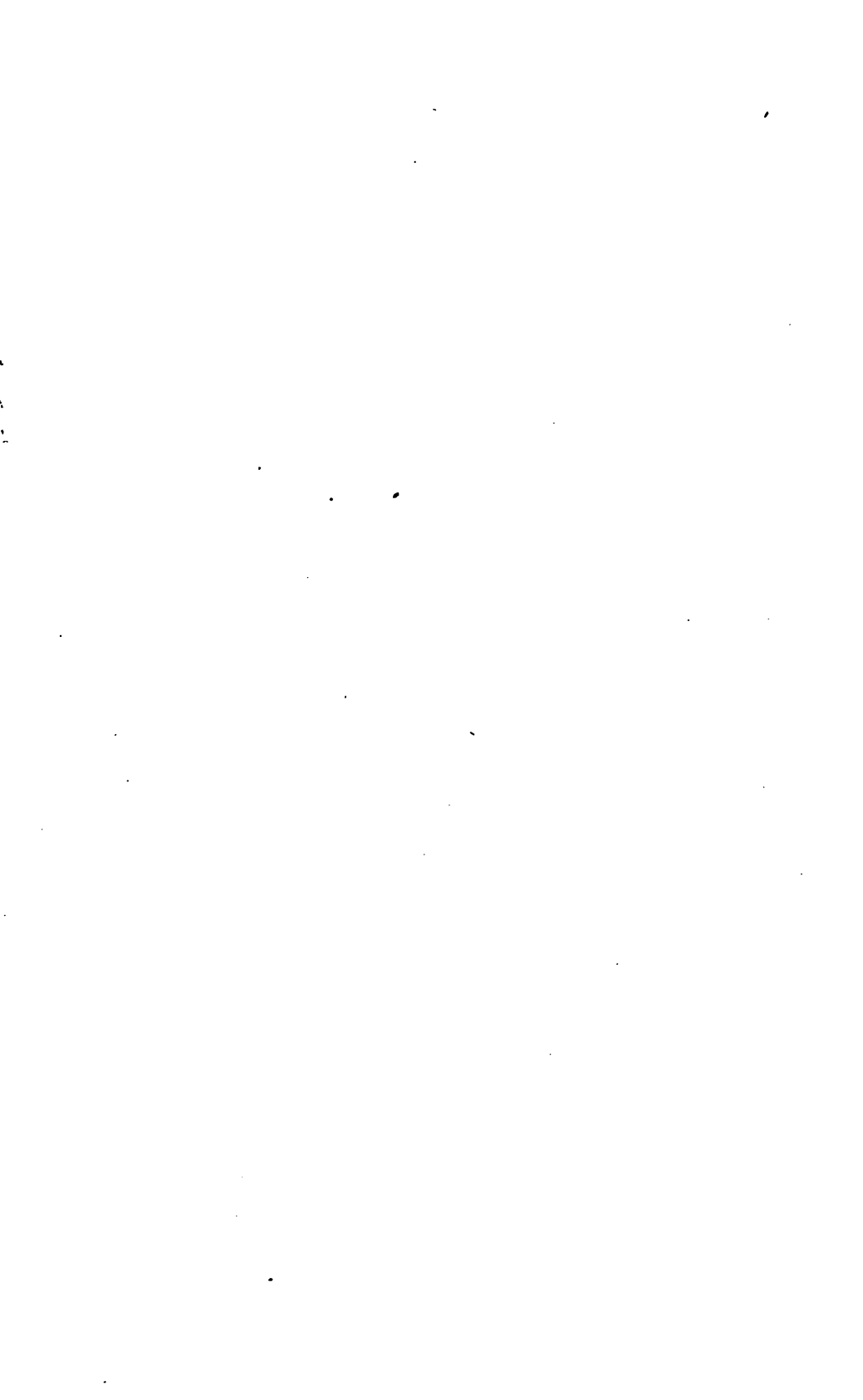
Railways in German East Africa.*—The Suez Canal Bulletin states that the following trunk lines have been decided on in German East Africa, viz: A line already in course of construction from the port of Tanga, on the Indian Ocean, to Nassa, on the shores of Spike Gulf, situated in the south of Lake Victoria Nyanza, passing through Usumbura and the district which lies between the southern slope of Mount Kilimanjaro and the north of lakes Mandjara and Ejassi; and a line starting from the port of Dar el Salaam across Ugami to the southern point of Lake Tanganyika.

Iron Bridge Required at Lourenço Marquez.—The Portuguese Bulletin Commercial is quoted in the Board of Trade Journal, London, January 4, 1900, as advertising for tenders for an iron port bridge 853 feet (260 meters) long and 65½ feet (20 meters) wide, to be built in the port of Lourenço Marquez. Tenders are to be deposited with the general office of the colonies, at Lisbon, by March 23, 1900, 4 p. m.; time allowed for construction, eighteen months; security to be deposited—provisional, 20,000 milreis;† definite, 5 per cent of sum for which contract is awarded.

Tenders for a Railway in the Azores.—According to the Board of Trade Journal, London, January 4, 1900, tenders are invited by the Junta Geral of the district of Ponto Delgada, not later than March 12, 1900, for the construction and working of a railway between the city of Ponto Delgada, the Fumas Valley, and the town of Ribeira Grande.

* From the Board of Trade Journal, London, November, 1899.

† The Portuguese milreis is valued by the United States Director of the Mint at \$1.08.





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Full directions for binding the Consular Reports are given in No. 131, page 663.

PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—ADVANCE SHEETS, CONSULAR REPORTS, issued daily, except Sundays and legal holidays, for the convenience of the newspaper press, commercial and manufacturing organizations, etc.

IV.—EXPORTS DECLARED FOR THE UNITED STATES, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months.

V.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880-81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885-86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Flies in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Slave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

* Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE. IX

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia. Part IV. Africa. Part V. Australasia and Polynesia. (Parts III, IV, and V not yet published.)

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries, Files in Spanish America, Fire and Building Regulations, Gas in Foreign Countries, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation, Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz. "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston makes the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to \$20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States. The value of the Indian rupee, although calculated according to law at the value of the pure metal contained therein, has a commercial value above the value of the silver bullion; consequently the value for customs purposes is determined in each case by the consular certificates attached to the invoice of exports from that country to the United States."

The following statements, running from January 1, 1874, to January 1, 1900, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account

that the ruble of Russia, for instance, fluctuated from 77.17 cents in 1874 to 37.4 cents in April, 1897, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, 1882, and 1891-95 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

XII VALUES OF FOREIGN COINS AND CURRENCIES.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic*.	Gold and silver..	Peso.....	\$0.96,5	Gold—Argentine (\$4.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†....	Gold	Crown.....	.20,3	Gold—20 crowns (\$4.05,2) and 10 crowns.
Belgium	Gold and silver..	Franc.....	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis.....	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar.....	1.00	
British Honduras.....	do	do	1.00	
Chile.....	do	Peso.....	.36,5	Gold—escudo (\$1.25), doubloon (\$3.65), and condor (\$7.30); silver—peso and divisions.
Costa Rica.....	do	Colon.....	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centesimos.
Cuba	Gold and silver..	do	.92,6	Gold—doubloon (\$5.01,7); silver—peso (60 cents).
Denmark	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Egypt.....	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	do	Mark.....	.19,3	Gold—10 and 20 marks (\$1.93 and \$3.85,9).
France	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark.....	.23,8	Gold—5, 10, and 20 marks.
Great Britain.....	do	Pound sterling...	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver..	Drachma.....	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde.....	.96,5	Silver—gourde.
Italy.....	do	Lira.....	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan ‡	Gold.....	Yen.....	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia	do	Dollar.....	1.00	
Netherlands§.....	Gold and silver..	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar.....	1.01,4	Gold—\$2 (\$2.02,7).
Portugal.....	do	Milreis.....	1.08	Gold—1, 2, 5, and 10 milreis.
Russia ¶	do	Ruble.....	.51,5	Gold—imperial (\$7.718) and ½ imperial (\$3.80); silver—¼, ½, and 1 ruble.
Spain.....	Gold and silver..	Peseta.....	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster.....	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay	Gold	Peso.....	1.03,4	Gold—peso: silver—peso and divisions.
Venezuela.....	Gold and silver..	Bolivar.....	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875, the gold standard prevailed.

† The gold standard was adopted October 1, 1892. (See CONSULAR REPORTS No. 147, p. 623.) Values are still, however, frequently expressed in the florin or gulden, which is worth 2 crowns or 40.6 cents.

‡ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

§ See note to table of fluctuating currencies.

¶ For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896-97, p. 254.

B.—Countries with fluctuating currencies, 1874-1890.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1890; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6	.....	.....
China.....	Silver.....	Haikwan tael.	1.61	1.61	.....	.....	.....	.....
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupee.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	{ Gold..... Silver..... }	{ Yen..... }	.99,7	.99,7	.99,7	.99,7	.....	.....
Mexico.....			1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡.....	Gold and Silver.	Florin.....	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....	.....	.....	.....	.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.94,3
India.....	Silver.....	Rupee.....	.37,8	.35,7	.34,6	.32,2	.32,3	.40,4
Japan.....	{ Gold..... Silver..... }	{ Yen..... }	.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico.....			.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

XIV VALUES OF FOREIGN COINS AND CURRENCIES.

C.—Quarterly valuations of fluctuating currencies.

Countries.	Monetary unit.	1897.				1898.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.47,4	\$0.46,8	\$0.44,3	\$0.41,2	\$0.42,4	\$0.40,9	\$0.41,8	\$0.43,6
Central Amer-ica.	Silver peso.....	.47,4	.46,5	.44,3	.41,2	.41,4	.40,9	.41,8	.43,6
China.....	Amoy tael.....	.76,7	.75,7	.71,7	.66,4	.68,5	.66,2	.67,6	.70,6
	Canton tael.....	.76,5	.75,5	.71,5	.66,4	.68,3	.66	.67,4	.70,4
	Chefoo tael.....	.73,3	.72,4	.68,6	.63,7	.65,5	.63,3	.64,6	.67,5
	Chinkiang tael..	.74,9	.73,9	.70	.65,1	.66,9	.64,6	.66	.69
	Fuchau tael.....	.70,9	.70	.66,3	.61,6	.63,4	.61,2	.62,5	.65,3
	Haikwan tael....	.78	.77	.73,1	.67,8	.69,7	.67,3	.68,8	.71,8
	Hankau tael.....	.71,7	.70,8	.67,1	.62,3	.64,1	.61,9	.63,2	.66
	Ningpo tael.....	.73,7	.72,8	.68,9	.64	.64,3	.63	.65	.67,9
	Niuchwang tael.	.71,9	.71	.67,2	.62,5	.65,9	.62	.63,4	.66,2
	Shanghai tael..	.70	.69,1	.65,5	.60,8	.62,6	.60,4	.61,7	.64,5
Colombia.....	Swatow tael.....	.70,8	.69,9	.66,2	.61,5	.63,3	.61,1	.62,4	.65,2
	Takao tael.....	.77,2	.76,2	.72,2	.67	.66	.66,6	.68	.71
Ecuador.....	Tientsin tael..	.74,3	.73,4	.69,5	.64,6	.66,4	.64,1	.65,5	.68,4
	Silver peso.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
India*.....	do.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Japan.....	Silver rupee.....	.22,5	.22,2	.21,1	.19,6	.20,1	.19,1	.19,9	.20,7
Mexico.....	Silver yen.....	.51,1	.50,5	.....	.....	.....	.....	.....	.....
Persia.....	Silver dollar.....	.51,5	.50,8	.48,2	.44,6	.46	.44,4	.45,4	.47,4
Peru.....	Silver kran.....	.08,7	.08,6	.08,2	.07,6	.07,8	.07,5	.07,7	.08,1
Russia.....	Silver sol.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
	Silver ruble.....	.37,9	.37,4	.....	.....	.....	.....	.....	.....

Countries.	Monetary unit.	1899.				1900.
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.
Bolivia.....	Silver boliviano.....	\$0.43,9	\$0.43,4	\$0.44,3	\$0.43,6	\$0.42,7
Central America.....	Silver peso.....	.43,9	.43,4	.44,3	.43,6	.42,7
China.....	Amoy tael.....	.71	.70,2	.71,6	.70,5	.69,1
	Canton tael.....	.70,8	.70	.71,1	.70,3	.68,9
	Chefoo tael.....	.67,9	.67,2	.68,4	.67,4	.66,1
	Chinkiang tael..	.69,3	.68,6	.69,9	.68,9	.67,5
	Fuchau tael.....	.65,6	.65	.66,2	.65,2	.64
	Haikwan tael....	.72,2	.71,4	.72,8	.71,8	.70,3
	Hankau tael.....	.66,4	.65,7	.67	.66	.64,7
	Ningpo tael.....	.68,2	.67,5	.68,8	.67,8	.66,5
	Niuchwang tael.	.66,5	.65,9	.67,1	.66,1	.64,8
	Shanghai tael..	.64,8	.64,1	.65,4	.64,4	.63,1
Colombia.....	Swatow tael.....	.65,5	.64,9	.66,1	.65,1	.63,9
	Tientsin tael..	.71,4	.70,7	.72	.71	.69,6
Ecuador.....	Silver peso.....	.43,9	.43,4	.44,3	.43,6	.42,7
India *.....	do.....	.43,9	.43,4	.44,3	.43,6	.42,7
Mexico.....	Silver rupee.....	.20,8	.20,6	.21	.20,7	.20,3
Persia.....	Silver dollar.....	.47,7	.47,2	.48,1	.47,4	.46,4
Peru.....	Silver kran.....	.08,1	.08	.08,2	.08	.07,9
	Silver sol.....	.43,9	.43,4	.44,3	.43,6	.42,7

* The commercial value of the rupee to be determined by consular certificate.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Aimude	Portugal.....	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are.....	Metric.....	0.02471 acre.
Arobe	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds.
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovets.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bouw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333½ (1½) pounds.
Do*.....	Japan.....	1.31 pounds.
Do.....	Java, Slam, and Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	120.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.

* More frequently called "kin." avoirdupois.

Among merchants in the treaty ports it equals 1.33½ pounds

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Dessiatine.....	Russia.....	2.6997 acres.
Do.....	Spain.....	1,599 bushels.
Drachme.....	Greece.....	Half ounce.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1,5745 bushels.
Do.....	Chile.....	2,575 bushels.
Do.....	Cuba.....	1,599 bushels.
Do.....	Mexico.....	1,54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do.....	Uruguay (double).....	7,776 bushels.
Do.....	Uruguay (single).....	3,888 bushels.
Do.....	Venezuela.....	1,599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddan.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2,5096 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	do.....	2,471 acres.
Hectoliter:		
Dry.....	do.....	2,838 bushels.
Liquid.....	do.....	26,417 gallons.
Joch.....	Austria-Hungary.....	1,422 acres.
Ken.....	Japan.....	6 feet.
Kilogram (kilo).....	Metric.....	2,2046 pounds.
Kilometer.....	do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Koku.....	Japan.....	4,9629 bushels.
Korree.....	Russia.....	3.5 bushels.
Kwan.....	Japan.....	8.28 pounds.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	113½ bushels.
Do.....	Spain (salt).....	4,760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2,115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Gulana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Load.....	England (timber).....	Square, 50 cubic feet; unhewn, 40 cubic feet; 1 inch planks, 600 super- ficial feet.
Manzana.....	Costa Rica.....	1½ acres.
Do.....	Nicaragua and Salvador.....	1.727 acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles.
Do.....	Denmark (geographical).....	4.61 miles.
Millia.....	Nicaragua and Honduras.....	1.1493 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¼ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castile.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Pund (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¾ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	0.02451 acres.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	11.9305 inches.
Sho.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (see cua- dra).
Sun.....	Japan.....	1.193 inches.
Tael.....	Cochin China.....	590.75 grains (troy).
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tsubo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914117 yard.
Do.....	Central America.....	32.87 inches.
Do.....	Chile and Peru.....	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Verges.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vlocka.....	Russian Poland.....	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.

Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.

Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.

Gram equals 15.432 grains.

Decagram (10 grams) equals 0.3527 ounce.

Hectogram (100 grams) equals 3.5274 ounces.

Kilogram (1,000 grams) equals 2.2046 pounds.

Myriagram (10,000 grams) equals 22.046 pounds.

Quintal (100,000 grams) equals 220.46 pounds.

Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.

Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.

Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.

Liter equals 0.908 quart.

Decaliter (10 liters) equals 9.08 quarts.

Hectoliter (100 liters) equals 2.838 bushels.

Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.

Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.

Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.

Liter equals 1.0567 quarts.

Decaliter (10 liters) equals 2.6418 gallons.

Hectoliter (100 liters) equals 26.417 gallons.

Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.

Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.

Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.

Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

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THE SIBERIAN RAILROAD.

The Sibirski Listok contains some interesting remarks about the building of the Siberian Railroad, of which the following is a summary:

In the haste of construction and the anxiety to get everything cheap, on both the Siberian and the Trans-Baikal lines, a special kind of light rails, weighing 12 pounds to the foot, instead of the usual 24 pounds to the foot, was used. Wooden bridges were built wherever it was possible and crossings were made far apart. Under such conditions, quick traveling on the road is almost an impossibility, and more than 20 miles an hour can not be made. Only one passenger and two freight trains a day are run. To add to the danger they have put on the line one of the heaviest engines in existence—the compound system. The light weight of the rails, the steep inclines, and the high gradings combined make traveling risky. On steep inclines, the compound runs at a rate of 50 versts (33 miles) an hour, turning the rails out, and there is no way of stopping it. At the station of Polovinoy, eleven cars were thus destroyed.

In such a condition do we find the Siberian Railroad at the present time. Fast traveling is impossible, as the rails are too light, while, on the other hand, slow traveling can not be always controlled, as the heavy engines can not be held back on the inclines. The committee of Michalovski have come to the conclusion that everything must be reconstructed. But this will cost a great sum of money—on the Trans-Baikal line alone there will have to be spent not less than 15,000,000 rubles (\$7,725,000), almost 50 per

cent of the entire cost of the line; on the whole Siberian Railroad there will have to be spent not less than 50,000,000 rubles (\$25,750,000). The light-weight rails must be put aside and wooden bridges turned into firewood; everything must be rebuilt and the number of stations increased.

Another newspaper (the *Dalny Vostok*) says:

Opinions about the Great Siberian Railroad vary widely; we think that its general plan is excellent, but there is room for improvement.

On account of economy, the road was built very light, little ballast being used in many places; rails, on the western half of the road especially, weigh not more than 24 kilograms (52.9 pounds) to the meter, thus making it dangerous for speedy traveling.

Further, the engineers thought it advisable to lay the line on marshy ground instead of on the neighboring highlands, where the ground is solid and firm; and in the near future it will have to be relaid. In some districts, again, a mistake was committed in the choice of the direction of the line. Tomsk, the capital of western Siberia, was left 80 versts (53 miles) on the side, and connected with the railroad by a bad road. Further, in order to foster home trade, the movable supplies and rails were ordered principally from Russian iron works in the Ural districts, and they cost twice as much as if they had been obtained in England. A great deal of material was provided in advance, and rotted before it was used.

The general cost of the Great Siberian Railroad is estimated to be 350,000,000 rubles (\$180,250,000), including 118,000,000 rubles (\$60,770,000) for the construction of the Amur line from Stretinsk to Khabarovsk, which project has been changed by the building of the Manchurian line. The last will cost 100,000,000 rubles (\$51,500,000). It is true that the Manchurian Railroad is constructed by a joint-stock company, but, as most of the shares are in Government hands, the greater part of the money must come from the Government treasury.

The cost of 1 mile of railroad is calculated at about 35,000 rubles (\$18,025) for the West Siberian division; 50,000 rubles (\$25,750) for the Trans-Baikal and Ussurian line. The construction of the railroad in North America under similar circumstances cost a great deal less than the above-mentioned sums, and yet these are calculated for 1891. The real cost will be probably increased to about 40,000,000 rubles (\$20,600,000) more, or 67,000 rubles (\$34,505) per mile, for the Trans-Baikal line.

It is asked, "What international influence will the Siberian Railroad have?" When the Manchurian line, which is about 200 miles long, is finished, the distance from St. Petersburg to Port Arthur will be 8,778 versts (5,819 miles); from Berlin, 9,550 versts (6,331 miles); from Paris, 10,650 versts (7,060 miles). This distance could have been traversed in one week, but such speed is impossible on the Siberian line at the present time. At a speed of 25 miles an hour, it will take two weeks to traverse the distance between London, Paris, and Berlin to Port Arthur or Vladivostok. When the road is improved, this can be shortened to about eleven days. As soon as the road is finished, it will be the shortest route between Europe and the Far East; from Paris, one will be able to go to the capital of Japan—Yokohama—in seventeen days. At present, there are two ways of communication between Europe and the Far East—west, by way of Canada; east, by the Suez Canal. The first takes twenty-five days; the last, thirty-four days. The center of oriental trade—Hongkong—will be reached in twenty days, while at present it takes twenty-five days by the way of Suez and thirty-four days by way of America.

Not only will traveling by way of Siberia be quicker, but it will also be cheaper. The fare now from London or Paris to the ports of the Far East is, first class, 1,800 to 1,840 francs (\$367 to \$375); while in Russia, thanks to the lowered passenger tariff on great distances, one will be able to travel from the German frontier to Port Arthur or Vladivostock for 107 rubles, or 285 francs (\$57), in first-class accommodations, and with a special train one will be enabled to travel from Russia to the Far East for 450 francs (\$86). The total cost of traveling from the West to the farthest point in the East will not be more than 800 or 950 francs (\$174 or \$183)—less than half what it is at the present time.

Some are of the opinion that it will be very uncomfortable to sit in the car for two whole weeks; but everything that can add to the comfort and welfare of the passengers will be provided in the special Siberian trains that will leave Paris weekly. These trains will be styled "extra Far East." There will be library, dining, bathing, and gymnasium cars. Certainly, traveling with such comforts ought not to be more tedious than a long voyage by sea.

As for the transportation of freight, the cost of transportation is more important than the time it takes. In this respect, the Siberian Railroad will not be able to compete with the sea. In 1897, the cost of transporting freight from Shanghai to London was 47.3 francs (\$9.12) per ton; in February, 1898, the understanding between the steamship companies was broken up, and the tariff fell to 28 francs (\$5.60). Such low rates for transportation can not continue long, and even if it reaches the normal sum of 40 francs (\$7.72) per ton, the Siberian Railroad will not be able to attract to itself the freight-carrying trade, for in order to do so it will have to take not more than one four-hundredth of a copeck per pood for each verst, and with such a tariff no railroad can cover its running expenses.

Thus, we can not expect to have the freight-carrying trade between China and western Europe, but the trade the Siberian Railroad will develop between China and Russia is quite another thing. Of the total sum of Chinese foreign trade, amounting to 1,375,000,000 francs (\$265,375,000), Russia has 5 per cent; the Siberian Railroad will undoubtedly increase this proportion. For the rest of Europe, the Siberian line will be of great importance as a means of quick and cheap passenger and mail communication between the different points of the Old and New World, which alone is sufficient to make it play a great rôle in international affairs.

R. T. GREENER,
Commercial Agent.

VLADIVOSTOCK, *November 20, 1899.*

COMMERCIAL AND INDUSTRIAL AFFAIRS IN SIBERIA.

KHABAROVSK EXPOSITION.

The Khabarovsk agricultural and industrial exposition was opened on the 2d-14th of September in the presence of the Amurian governor-general, Grodekoff. It is the first exposition in the forty years' existence of the Amur territory.

The exposition was rich in the variety of articles displayed. It gave a complete idea of the productive power of the territory. There were exhibits from more than five hundred persons. The exposition occupied the four large stone barracks of the line battalion, and in

the courtyards of the same were pavilions with all kinds of domestic animals. Representatives of the natives of the territory, with exhibits of their life and habits, were also encamped in tents.

The exposition continued for two weeks. Meetings were held for the discussion of agricultural questions. Each settled district of the Amur territory had a representative at the exhibition.

PORTS.

According to a dispatch in the Russia, it is proposed to turn the military port of Vladivostock into a commercial port, making it the principal terminus of the Trans-Siberian Railroad. Port Arthur will then become the chief military port of eastern Siberia.

Talienwan, which has been renamed "Dalny," will be the commercial port, and an "open" one, of the Pechili Gulf. Every effort will be made to make it an important trade center.

The plans of streets, Government buildings, etc., are already formulated and will be put in execution, while the construction of the various lines of railroad is also being pushed to completion.

DUTY ON TEA, ETC.

On the 20th of July, a telegram was received from the Minister of Finance, ordering an impost on tea of 22.50 rubles per pood (equal to \$11.59 per 36 pounds).

Leaf tea has hitherto been on the free list, and the sudden, unlooked-for imposition of duty has led to many conjectures. At present there is no duty on the common "brick tea," the poor man's drink. A duty of 3 rubles (\$1.55) per pound was also imposed on Chinese silver coin. Stringent orders are issued to prevent smuggling in every portion of the maritime province, this extensive coast line being difficult to guard effectively.

With the new tax comes the periodical rumor of the closing of the port and the establishment of a regular custom-house. At present, a board of excise performs the work for the few articles dutiable. The rumor of the establishment of a customs is denied by officials with whom I have conversed, but good authorities assert that the plan is already matured. It is thought the policy of the Government is to place the duty gradually on one or two articles at a time; naturally, first on those most likely to compete with products of Russia or Siberia.

COASTING TRADE.

The new law relating to the coasting trade, which prohibits foreign vessels sailing from one Russian port to touch at another, though situated in different seas, will give rise to some complications, so far as Talienwan (Dalny) is concerned. The law will take

effect January 1, 1900. If Dalny be strictly a Russian port and within the scope of the new law, this will prevent it being considered a "free port." If it is not subject to the new law, then it must be regarded as a Chinese port. Besides, there is grave doubt whether there is Russian capital of sufficient magnitude to build steamships, which do not pay more than 5 or 6 per cent profit in the world's market.

MANCHURIA.

Siberian papers continually refer to the time in the natural course of events when the vast and rich fields of Manchuria will become a part of the Russian Empire in the East. Here is a territory with an area of 15,000 square miles and a population of 7,000,000 only awaiting the transforming process which has made Liandoon formally Russian territory—the same process which occupied the Amur and the maritime provinces.

Manchuria at the present time is the promised land toward which all speculative eyes in Siberia are turned. On the west, north, and east, Russian frontier enfolds it—the Amur since 1858 and the maritime province since 1860—all original parts of Manchuria. The Russian Empire now has a firm grip at the south, not at all likely to be loosened, and no uprising or tumultuous advance, say Siberian writers, is needed to hasten the time when the ripe fruit will fall into the hands calmly waiting to receive it. The Cossack guards (4,200 infantry, 1,600 cavalry, and 4,000 "friends of China," gangs of Chinese officered by Russians), now patrolling the line of the Eastern Chinese Railroad, and the cost of the railroad itself are all big items of national expense; but they are worth the outlay and show the foresight and resistless energy of the Russians.

Much is said about the immense markets of the future to be formed among these Manchurians. There are wild tales of gold and the wonderful productivity of the soil. The natives themselves are a hardy, stalwart race, differing widely from their Chefoo and Hongkong and Shanghai confrères. Even in arranging the details of the grants of land and right of way, the Chinese Home Government is obliged to use greater caution in dealing with its northern subjects.

The Chinese Eastern Railway is sometimes ironically called "the Manchurian branch of the Siberian Railway." (Twenty-two sections of the main line are now completed, making more than 1,590 miles; Monkden to Port Arthur is already finished, and Stretinsk to Vladivostock will next be finished.) It is no longer ironical; it is a sober fact.

There lately passed through Vladivostock a representative of the St. Petersburg British embassy. This gentleman had visited Habin, the great railroad center of Manchuria, a town of 6,000 people, which

sprang up in eighteen months. The branch of the Russian-Chinese Bank at this place had 5,000,000 taels on hand, and 1,000,000 additional had been sent within a week.

He had inspected the line, noticed the trend of improvement, and the rapidity with which all the railway work through Manchuria was being pushed. He saw much waste of material; the helpless Baldwin locomotives sent with fire boxes for wood in a country where there is no wood, and compound engines instead of the ordinary ones. These were sent last winter from Vladivostock to Niuchwang, and after a series of accidents reached the Shanhai-Kuan-Niuchwang line, the most rickety and dangerous place perhaps on the whole railway.

But whether Government property is properly handled and accounted for, or prodigally used, the road is progressing. It is thoroughly guarded; the Chinese themselves are being transformed into working men, guards, etc.

MILLERISM IN RUSSIA.

The Siberian papers are full of news concerning the excitement among the lower classes of peasants because of the end of the world some time in November. The prediction of the meteoric display in the northern heavens about November 13-14 has been seized upon to revive the Millerite excitement of the United States. A real panic and stampede occurred among the laborers at Kharkof. The operatives deserted the factories, and immense numbers are scattering to their native villages to die at home. The owners of many mills have been obliged to seek the aid of the police to check this wholesale migration, which not only results in misery for the wretched peasants, but serious loss and expense to the various industries.

THE INSTITUTE FOR EASTERN LANGUAGES AT VLADIVOSTOCK.

On November 2 (October 21), the new Institute for Eastern Languages was dedicated with appropriate ceremonies. This institute is an important part of the programme which Russia is carrying forward in the East. The study of eastern languages—Chinese, Japanese, and Korean—is all important, and these are to be undertaken by the brightest pupils from the local gymnasiums, and even by those who are not graduates of any gymnasium. Russians are proverbially talented as linguists, and there are few educated persons who can not converse fluently in French or German, generally in both. But Chinese, Japanese, and Korean are difficult in themselves, and these difficulties are enhanced by the divergence of provincial dialects.

Great care has been exercised in the selection of the institute

head and his corps of assistant professors; all are young men, except the director, Professor Pozdnioff, a gentleman of ripe experience and thoroughly informed as to the scope and magnitude of his work.

For the current year, 30,000 rubles (\$15,390) are appropriated for the gymnasium and 10,000 rubles (\$5,130) for furniture and educational appliances. For the Eastern Institute, the initial appropriation is 77,000 rubles (\$39,501) for all purposes; so that hereafter Vladivostock may look forward to an appropriation of from 100,000 to 120,000 rubles (\$51,500 to \$61,800) for higher educational work, a very creditable showing on the part of the Imperial Government.

The dedicatory exercises of the Eastern Institute were on the order of the usual beginning, or "commencement," of an American college. The large hall was decorated with plants, flags, flowers, banners, and streamers. The portraits of the Emperor and Empress occupied a conspicuous place above the head of Governor-General Grodekoff. The audience was the most brilliant I have seen in this city, and there was a marked absence of that formality so usual in Russian official gatherings. The archbishop of eastern Siberia, assisted by six priests and acolytes, first performed a solemn service, by which the school was consecrated to the service of the Pravoslavian Church. Then the imperial decree authorizing the school was read, followed by an address on the languages of the East in Russia for the last three hundred years by V. P. Margaritoff and an address on the history of the Eastern Institute by N. P. Taberio.

On November 1, the institute opened. The professor of English is an American citizen—Mr. Lugobil. He became an American citizen by choice when we acquired possession of Alaska in 1867. He was for a time a resident of San Francisco, but has been here for ten years; he is also instructor in English in the local gymnasium. Professor Lugobil is an excellent linguist.

THE EASTERN ASIATIC STEAMSHIP COMPANY.

The plan of the Russian Government to form an eastern Asiatic steamship company, to open communication between Port Arthur, the Manchurian Railroad, Vladivostock, and other ports of the Far East, is now arranged. The service between Vladivostock and Port Arthur will soon be begun.

The new steamship company is practically part of the Eastern Chinese Railway system, a popular enterprise, in which the Imperial Government holds the majority of the stock.

Messrs. Sheveloff & Co., pioneers in the steam coasting trade,

have recently found it advisable to lease their subsidy from the Russian Government for a certain term. The ships of this firm will enter the new service about January 1, 1900. It is proposed to put ten steamers on the new line.

RICHARD T. GREENER,

VLADIVOSTOCK, *November 16, 1899.*

Commercial Agent.

RUSSIAN MIGRATION TO EASTERN SIBERIA.

The Khrestianin settlements in the Amur territory are situated as follows: On the vast lowland plain, which is bounded on the west by the River Zeya, on the east by Boory, on the north by the River Beermoy, and on the south by the River Amur. The coast line of the River Amur is occupied by Cossacks and Chinese Russian subjects. The most northern settlement on the River Zeya is situated 216 versts (143 miles) from its source. The most easterly settlement from Zeya is situated on its tributary, the Boondoond. On the right high bank of the River Zeya there are nine settlements; on the Amur, above the outlet of the River Zeya, four; on the Amur, below the Zeya, there are also four settlements. Beside these, there are four more settlements on the land belonging to the Cossacks of the Amur militia.

The government consists of the military governor of the territory, the district officer, the immigrant officer, the assistant attorney of the district court, the district treasurer, and the village police commissary, who is also the justice of the peace.

There are sixteen churches in the settlements—including one Unitarian church, nine chapels, and one house of prayer—and twelve public schools.

There are seventy-nine grain elevators at present. Each settlement has its own elevator, with the exception of those settlements which have been recently formed. In four of the principal settlements twelve fairs are held annually; in three, they have weekly markets.

On the 1st of January, 1897, there were 6,593 families, numbering 44,943 persons, viz, 23,978 males and 20,965 females, including 10,314 males from the age of 16 to 60, who are obliged to pay taxes and are subject to military obligations.

According to religion they are divided as follows: Greek Catholics, 5,524; Unitarians, 44; orthodox and dissenters, 1,384. Fifty per cent of the settlements are "Little Russians;" the rest are "Great Russians." The first came from European Russia; the majority of the second from the provinces in western Siberia.

The settlement of the Amur territory by agriculturists began in 1859, with the establishment of the village of Astrakhan, on the River Zeya, not far from Blagovestchensk.

The formation of the settlements is shown in the following statement: Decade ended 1869, 38 settlements; 1879, 14 settlements; 1889, 39 settlements; 1897, 19 settlements; total, 110 settlements.

The number of houses in the settlements is as follows:

Number of settlements.	Houses in each settlement.	Number of settlements.	Houses in each settlement.
16	10 to 20	3	80 to 90
15	20 to 30	5	90 to 100
14	30 to 40	15	100 to 150
9	40 to 50	2	150 to 200
7	50 to 60	1	200 to 300
4	60 to 70	1	400 to 500
9	70 to 80	1	Over 500

For the use of the settlers of the Amur territory, there are provided 805,206 acres of land. There is a proposition to open 159,890 acres more, or 965,090 acres, for the use of 6,953 families, instead of the 695,300 acres originally provided. All the land given to settlers is counted as grants; not as their own property. The total sowing acreage in 1897 was 41,113 acres, an increase of 11,634 acres over 1896.

Live stock belonging to the settlers on the 1st of January, 1897, was: Horned cattle, 21,050; horses, 22,261; sheep, 4,599; pigs, 7,389. The average number for each house was: Horses, 3; horned cattle, 3.

According to statistics for the last ten years, it is shown that between the starting points of Tomsk and Atchinsk to the final point of Blagovestchensk, 46 per cent of the migrants fail to reach destination.

In Tomsk in 1887 and Atchinsk in 1896 there were registered 5,368 families for the Amur territory; of this number, only 2,904 families reached Blagovestchensk.

Personal observation shows that this loss, which happens annually in the same proportion, is to be ascribed, not to the difficulties of the road or the lack of means to reach the destination, but to other causes. Only those are permitted to go to the Amur who have enough to carry them through. Migrants have a right to a Government subsidy to about 175 rubles (\$90) per family. The real reasons why such a large percentage of migrants fail to reach their desti-

nation are: (1) They try to settle along the route in order to avoid the trouble and expense of a longer journey; (2) they are tempted to stop in order to work on the Siberian Railroad and get good pay; (3) they hear bad reports about the condition of the Amur territory from those returning to Russia.

THE AMUR TERRITORY.

The Amur territory, of all places in Siberia, appears to be the most suitable for settlers. The summer, to judge by the grain and vegetables, is something like the period of vegetation in Chernigoff and Kovensk provinces, in European Russia. Field labor begins in April and ends about the 1st of October. The winters are very cold, and the attempt to introduce middle Russian fruit trees has not thus far succeeded. It does not demand as much fuel as other parts of Siberia.

The large percentage of humidity insures the land from dryness; thus, it always has good crops of hay. This humidity also prevents the development of insects injurious to the grain. The soil is fertile and does not require a great deal of labor to cultivate it. Wood is plentiful, both for heating and building purposes, save in places where the forests have been denuded by the settlers.

The settlers can dispose of their grain at a good price, for the production is a great deal less than the demand for the maintenance of the mining population and army. If a new settler can not get a start by his own efforts and with the assistance the Government renders, he and his family can get employment at high wages as laborers on the Siberian Railroad.

The amount of rain which falls at the time of field labor is excessive. The rain falls in torrents, but continues for a comparatively short time; then the sky clears, and the sun and the powerful winds that are frequent in the territory dry up the land quickly. The rains interfere very little with getting in the crops.

In 1896-97, inundations caused great loss of property; the rainy season continued from the end of June to the beginning of September. Streams usually a few feet wide swelled to a width of 2 miles, while the lowlands were turned into lakes. The ground was softened to such an extent that men and animals alike sank into it. The damage to hay amounted to \$20,000 and to grain to \$125,000. Of a sowed acreage of 41,000 acres, 3,700 were destroyed by the flood, while the grain that escaped the inundation was very poor in quality as well as small in quantity. Besides the damage to the crops, the rain spoiled the roads, and all communication between the villages ceased.

PESTILENCE AND CATTLE PLAGUE.

The Siberian pestilence and cattle plague are the real scourges of the settler and hindrances to the growth of the population. Settlers already acclimatized say that, for their complete welfare, one thing only is lacking, and that is to get rid of the cattle pestilence. In 1897, by the 25th of August, 654 horses had died, or 3 per cent of the entire number; and in 1896, the number ran up to 2,399 horses and 233 head of cattle, or 9.7 per cent of the horses and 1 per cent of cattle. The pestilence does not rage equally throughout the country. In 1896, in one village 28.6 per cent of the horses died; in another village, 17 per cent.

GOVERNMENT ASSISTANCE.

As soon as a settler arrives at his destination, he is assisted from the Government treasury. This rule was adopted on the 15th of March, 1896. Up to that time, assistance was rendered in extreme cases only, and very little at that. At present, assistance is given to "Meschians" and "Krestians" (lowest classes), but not to any other class. Government land can be acquired by any man who is a Russian subject, no matter to what class he belongs; and in accordance with the rule of the 15th of March, 1896, needy settlers of the Amur territory have a right to the following Government assistance: (1) Traveling expenses, \$75 to \$88; (2) settling expenses, from \$38 to \$75; (3) seed for 2 acres; (4) timber from the Government forests.

In 1897, when the migrants heard of this rule, they all clamored for assistance. It became necessary to inform them that no one had a right to these grants unless he had lived three years in the territory before he made the application for assistance, and then it must be ascertained that he was really in need.

From the 1st of January to the 1st of October, 1897, 951 applications were made for assistance, amounting to \$25,000. Of this number, 370 applications, amounting to \$8,000, were granted; the rest were refused, as they were not in need.

The delay in verifying the applications is remarkable. For instance, on the 1st of April there were brought in 531 applications for seed. They verified only 383. From the 1st of April to the 1st of June there were 420 applications; they verified only 202. Of course, this delay is caused to some extent by the unreliability of applicants and the lack of proper administrative force in the territory and districts.

For the four years 1894-1897, the following grants of timber were made to 411 families: Logs, 137,048, valued at \$16,555; poles, 87,275, valued at \$244.

LACK OF CREDIT.

The absence of credit in the territory is felt very greatly by the settlers. A settler who must begin work or an old resident at whose busiest season a machine breaks or a horse dies is compelled to borrow money, no matter what the conditions are. What these are one may see from the following:

A peasant borrowed \$26 from one of the local merchants for three months, binding himself to pay the merchant at the end of the term \$51 worth of oats at 5 cents per 36 pounds less than the market price at the time of delivery. The peasant also bound himself not to take any cash for the remainder of the oats, but to fill up his balance with merchandise, which is apt to be expensive and of poor quality. Therefore, in this transaction the merchant had 200 per cent annual interest for his money.

NATIVE INHABITANTS.

The natives of the territory are few and composed of different tribes—Orochians, Manegrees, Toongus, Berars, and Golds. These tribes do not occupy themselves with farming or cattle breeding; therefore, there is no friction between them and the Russian settlers.

The Manchurian settlements occupy an area of 108,000 acres of land, stretching from Blagovestchensk downward along the course of the Amur River for about 36 miles, and inland for about 12 miles. The settlements consist of thirty-seven villages.

The greatest evil among the Manchurians is the smuggling of intoxicating liquor called khanshin, or khany, into the Russian territory. It can not be said accurately how much of the liquor is smuggled, but the quantity must be very great.

THE CHINESE IN THE AMUR.

The great number of Chinese laborers and small merchants arriving in the Amur territory deserves serious attention. The unanimous voice of the people is that the inroads made by the Chinese into Russia will be a matter of danger in the future. Beginning from Irkutsk, there is not a village or a settlement that is free from Chinamen. Everywhere there are small Chinese shops. In Stretinsk, Chinese laborers and tradesmen begin to appear in great numbers. In Blagovestchensk, Khabarofsk, and Vladivostock, there is only Chinese and Korean labor. In these cities, Chinese merchants compete with even the most solid foreign houses. The Chinaman has the effect of cheapening labor a great deal, and thus giving the settlers no chance to work. At present, Chinese can not compete with Russians in field labor, as they do not know the Russian methods

of work; besides, the Chinaman will not work in the field when it rains.

The yellow population, male and female, of Vladivostock and Khabarovsk is as follows: Chinese, 7,757; Japanese, 1,427; Koreans, 980; total, 10,164. Of the settlements: Chinese, 2,196; Japanese, 194; Koreans, 16,450; total, 18,740—making a grand total of 28,904.

The number of Manchurians at work in the Amur territory in the year 1897 reached 35,118 men; Koreans, 1,249.

DEMAND FOR GRAIN.

In 1893, at a meeting of well-informed persons at Khabarovsk, it was shown that the grain supply of this place is insufficient when compared with its demand. Since then, the market has greatly increased, as we see from the following figures:

Through the two ports of Vladivostock and Nikolaefsk alone there were imported in three years (1894, 1895, and 1896) 200,849,400 pounds of flour, of which over 90,000,000 pounds were imported in 1896.

The same difficulty is experienced in the meat supply, on account of the cattle pestilence. It happens that at times the cities are left entirely without meat. Cattle is imported chiefly from Manchuria and the Trans-Baikal provinces.

The grain of all kinds, wheat being the principal product, gathered in the south Ussurian districts in 1895 and 1896 amounted to 102,625,200 pounds and 68,500,584 pounds, respectively.

KHABAROVSK REGION.

The settlement of the Khabarovsk region only began in 1892; since then, seven villages have been established, with a population of 1,086 persons and 174 houses.

During the six years from 1892 to 1897, \$42,000 was spent on the villages from the Siberian Railroad fund.

GENERAL.

From 1882 to the 1st of January, 1899, there arrived in eastern Siberia 1,117,715 migrants from European Russia overland and 33,608 by sea. From 1883 to 1899, 532 persons returned to Russia.

Along the Siberian Railroad, there are sixteen medical stations, with hospitals for the accommodation of 384 persons. There are summer quarters with accommodation for 8,500 persons and winter quarters for the accommodation of 4,580 persons; the total cost of all these buildings amounts to \$190,000.

RICHARD T. GREENER,

VLADIVOSTOCK, *November 19, 1899.*

Commercial Agent.

AMERICAN DREDGE IN RUSSIA.

The successful trials of a powerful dredge—*Beta**—built for the Russian Government by the Société Cockerill, of Seraing, Belgium, from plans drawn by Lindon W. Bates, of Chicago, have attracted the attention of the leading countries of the world. The contract for this boat, made in 1897, demanded a capacity of 1,600 cubic yards an hour, with a premium of half the dredge's cost if it should deliver 2,400 cubic yards an hour, which was beyond anything heretofore attempted. The *Beta's* official trials have recorded a capacity of 7,800 cubic yards per hour.

The first of these hydraulic dredge boats was built for the United States Government in 1896 for use on the bars in the Mississippi River. It attracted the attention of the Belgian Government, which sent a committee of engineers to America to investigate the Bates system with reference to the availability of the machines for the proposed "Grande Compure" in the Scheldt below Antwerp. The commission reported minutely on the American dredges and advised their adoption for the Scheldt improvement. This report attracted the attention of the Russian authorities, who had been trying to find means to remove obstructions in the Volga for a long series of years, when Prince Hilkoﬀ, Minister of Ways and Communications, invited Mr. Bates, who was in St. Petersburg, to make for the Government a private report upon its ports, as well as to examine the Volga and report upon the adaptability of his dredging system to its conditions.

The Volga is of the very highest importance to Russia. It is not only the first river of the Empire, but it is its greatest transport highway. The railroads do not, as in the case of the Mississippi, parallel the stream, but cross it, and are not its competitors. The Volga is connected with the Arctic Ocean by canal, and with the Baltic by a system of canals. Half a dozen large steamship lines, with boats of the latest construction, run daily routes, and the river is alive with barges and craft of every variety. The oil trade at the mouth of the river is 8,000,000 tons yearly, and the grain trade is very important. Navigation is, however, seriously handicapped by bars, to cope with which no satisfactory instrument had been found. Many of these ports are of importance to the Empire. At Rostoff-on-the-Don, 1,612,903 tons of grain have to be moved by barges to vessels anchored in the Azof Sea. Kherson, at the mouth of the Dnieper, and Nicholaief, on the Boog, are natural outlets for the coal and iron industries of the Donetz Basin. Nicholaief is, next to

* See CONSULAR REPORTS No. 231 (December, 1899), p. 543.

Sebastopol, the largest naval station of Russia in the south. Akerman is the outlet of Bessarabia, which takes added importance from the fact that the Kilia branch of the Danube, carrying 63 per cent of the discharge, is, since the Turkish-Russian war, in Russian territory. The Sulina branch in Roumania is under the jurisdiction of an international commission and is neutral; but the improvement of the Kilia branch would give the Russians independent access to the Danube Basin. The most perplexing engineering problem, however, which exists in southern Russia is that of the mouth of the Volga. Forty miles out at sea in the shallow water beyond the great Volga Delta is a floating city of many thousands, engaged in transferring oil from the deep-draft boats of the Caspian to the shallow craft of the Volga. To devise some acceptable scheme of improvement, which would obviate this transfer, has been the study of the Government for many years.

Mr. Bates' report to Prince Hilkoﬀ resulted in a contract to construct for the Russian Government, for the sum of \$515,000, the largest and most powerful dredging machine in the world, to be self-propelling by electric power, something unheard of in hydraulic dredging.

So general was the interest in the official trial that, in addition to Prince Hilkoﬀ and four Russian commissioners, there were present the German, French, Austrian, and Turkish ambassadors, the Belgian ministers, commissions from Australia, India, Germany, France, and the Argentine, and hundreds of engineers from all parts of Europe. Trains were run at reduced rates to accommodate the people eager to see the "American dredge," and the Société Cockerill for six weeks kept boats at Antwerp taking visitors up and down the Scheldt to the points of operation.

The official trials demanded two things: First, that the dredge should on a 2-foot cut 1,000 feet in length make an output of 1,500 cubic meters (52,974 cubic feet) per hour; second, that in a three hours' continuous run in a cut $3\frac{1}{2}$ feet deep it should put out 3,000 cubic meters (105,948 cubic feet) per hour. The three-hour test was to prove the capacity for enduring work. The measurements were made at Antwerp in excavation. The official record states that the tests show an average capacity, "conservatively estimated," of 7,000 cubic yards an hour. This by barge measurement gives about 8,400 cubic yards per hour as the average. The maximum was at the rate of 10,350, both being one-third in excess of the highest official records attained on the Mississippi.

Prof. V. E. Timonoff, Councilor of State and one of the commissioners sent down to accept the dredge, summarizes as follows:

According to contract, the dredge should excavate 3,000 cubic meters at a thickness of $3\frac{1}{4}$ feet and 1,500 cubic meters at a thickness of 2 feet. Comparing these

figures with the official report, we see that for a stratum of $3\frac{1}{2}$ feet the capacity proved to be 1.46 times more than contracted; for a stratum of 2 feet, 3.77 times more than contracted for.

The Electrical World adds:

As the machine is self-propelling and self-controlling, the electric features manifestly have added enormously to the effective use of the dredge and have minimized all possible interference with or from commerce.

On the completion of the Belgian trials the machine was brought to St. Petersburg, where, in the presence of an important body of officials, it was again put through a series of tests. These but served to confirm the first record, so the dredge was formally accepted by the Russian Government and awaits the spring to proceed to the Volga.

The government of Queensland, Australia, having difficulty with its harbors and a capital city which floods keep inundating, invited Mr. Bates to visit that city last winter. He has reported on all the ports of the colony. His system was adopted, and machinery to the value of \$1,250,000 was decided upon, provided the Russian trials should prove the machines capable of fulfilling the contracts.

On the way from Australia to Europe, Mr. Bates stopped at Calcutta. While in London he had been asked to examine the Hooghly and submit a plan for its relief. Mr. Bates was told that he must make a proposition on the "no-cure-no-pay" basis. The remedy proposed by Mr. Bates appears to have been quite different from those previously suggested, and his project aroused enough interest to induce the Calcutta board to send their chief engineer to Antwerp to be present at the Russian trials, and then to proceed to America on a further tour of inspection.

As the result of the trials of the *Beta*, Calcutta has closed an order for one dredge of the same type. Queensland has contracted for three, of 10,000 horsepower. Of these, one destined to combat the effects of floods is to be more powerful than the Volga machine. Russia has in contemplation several more, and other negotiations are pending which will carry this valuable invention to many countries of the globe.

W. R. HOLLOWAY,
Consul-General.

ST. PETERSBURG, *December 8, 1899.*

RUSSIAN WEIGHTS AND MEASURES.

Under date of November 20, 1899, Consul-General Holloway, of St. Petersburg, transmits the following list of Russian weights and measures, taken from the law which became effective January 1, 1900:

ARTICLE 1. The basis of Russian weights is the pound (funt), made in accordance with the platinum sample of 1835, and to the bronze gilt pound of 1747.

marked "H 1894," and equal to 0.40951241 of the international kilogram and to 0.90281789545 of an English pound.

ART. 2. The Russian pound contains 96 zolotniks, or 32 lots; a zolotnik has 96 dolias; 40 pounds (funts) form a pood.*

ART. 3. The basis of the Russian long measure is an arshine, equal to 28 English inches and to 0.7112 of the international meter.

ART. 4. The Russian arshine contains 16 vershoks, or 28 dumes; a dume has 10 lines, or 100 points. Three arshines form a sagene, or 7 feet. Five hundred sagenes form a verst.

Remark.—In long measures, the sagene can be divided according to the decimal system.

ART. 5. The fundamental measure of time is "sutki" (day and night), consisting of twenty-four hours, according to the average time of the sun. An hour contains sixty minutes; a minute, sixty seconds. The hours are counted in St. Petersburg according to data of the Nicolas Principal Observatory at Pulkova; in other localities, according to their geographical longitude.

ART. 6. For measuring surfaces square measures are used. For measuring the surface of land the dessiatine (2.699724517906 acres) is equal to 2,400 square sagenes.

ART. 7. Cubic long measures serve for measuring the volume of bodies.

ART. 8. For measuring the volume of dry substances, chetverts (5.774889915814 bushels), containing 8 chetveriks (1 chetverik=0.721861239477 bushels), are used; a chetverik has 8 garnetz (1 garnetz=0.360930619738 pecks). A garnetz comprises 8 pounds of pure water, with a temperature of $16\frac{2}{3}^{\circ}$ C., international hydrogen thermometer.

ART. 9. For measuring the volume of liquids the vedro (2.70697964813 gallons) and its subdivisions are used, viz: Stoff or kruzshka=one-tenth of a vedro; polustoff or beer bottle=one-twentieth of a vedro; wine bottle=one-sixteenth of a vedro; charka=one one-hundredth of a vedro; and shkalik=one two-hundredth of a vedro.

ART. 10. The international meter and kilogram and their subdivisions may be used in the Empire in bargains, contracts, estimates, etc., on the mutual consent of the parties interested.

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MANUFACTURE OF ALCOHOL FROM ACETYLENE.

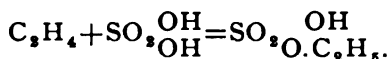
In compliance with a request from a resident of Connecticut, a Department instruction was sent, under date of August 3, 1899, to certain consular officers in Europe, directing them to report on the manufacture of alcohol from acetylene. The reports follow.

PARIS.

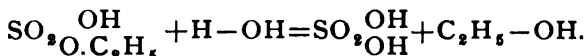
Mr. Berthelot, whose letter accompanies this report, was the first to make a synthesis of alcohol from a purely theoretical point of view. The acetylene is transformed into ethylene. This gas is brought into contact with mercury with concentrated sulphuric acid,

* 36.112 pounds avoirdupois.

then shaken briskly for three-quarters of an hour, or about 3,000 movements; the results being ethylsulphuric acid, or sulphovinic.



This acid is diluted with water from eight to ten times its volume, and then undergoes distillation. The sulphuric acid reforms and a mixture of water and alcohol passes.



The alcohol is extracted in a second distillation by the use of carbonate of potassium.

The sulphuric acid is thus regenerated, but diluted with water. It can not, therefore, reenter into the manufacture until it has been brought back to its primitive concentration.

The *Moniteur de l'Industrie du Gaz* gives the speculative calculation of the cost price of alcohol by this process as follows to obtain 100 liters (22 gallons) of alcohol: Carburet of calcium, 139.13 kilograms (306.72 pounds); hydrogen, 4.35 kilograms (9.59 pounds); concentrated sulphuric acid, 213.05 kilograms (469 pounds). The price of carburet of calcium in the above is calculated at 10 centimes (1.93 cents) the kilogram. This is evidently a price much too low. Twenty centimes (3.86 cents) is nearer the cost price, providing that the carburet and the alcohol are made in the same factory; otherwise, the calculation should be 40 centimes (7.72 cents).

Estimated at 20 centimes (3.86 cents), we have as follows:

Detailed expenses.	Total cost.	
	<i>Francs.</i>	
140 kilograms (308.64 pounds) of calcium at 20 centimes (3.86 cents) per kilogram..	28.00	\$5.40
4.35 kilograms (9.59 pounds) of hydrogen at 3.50 francs (67.5 cents) per kilogram..	15.25	2.94
Absorbent salt to regenerate the sulphuric acid.....	1.50	.29
Labor and fuel.....	2.00	.39
Wear and tear of material.....	1.50	.29
Rent and general expenses.....	5.00	.96
Total	53.25	10.27

As alcohol is at present worth about 29 to 30 francs (\$5.59 to \$5.79) the hectoliter (26.417 gallons), this cost price is much too high, as it would be also if the carburet were diminished one-half in price.

The application of this method is not without its difficulties from a practical point of view. The following process has also been proposed:

To use the apparatus invented by Sainte-Claire-Deville for the

intermittent preparation of hydrogen, which is composed of two bottles tubulated near the bottom and connected by a rubber tube. In one of the two bottles, which is hermetically closed, a stopper furnished with a tap is placed. A mixture of zinc and carburet of calcium in the proportion of 2.5 kilograms (5.5 pounds) of zinc for 2 kilograms (4.4 pounds) of carbonate of calcium, and not zinc, as in the preparation of hydrogen, is used. The other bottle, which is open, receives the acidulated water, containing 3.2 kilograms (7 pounds) of sulphuric acid to 5 liters (1.1 gallons) of water. Upon the removal of the last bottle, the acidulated water comes in contact with the zinc and the carburet of calcium at the same time; the hydrogen and the acetylene thus formed combine and produce ethylene, which passes out by the tap. This tap being closed and the open bottle lowered, the liquid is driven back by the gas which is produced and soon ceases to act on the zinc and the carburet.

Upon leaving the producing apparatus, the ethylene passes into a ball-shaped glass containing hot sulphuric acid and is transformed into ethylsulphuric acid. This, once formed, runs into a decanter, where it is subjected to distillation. The alcohol afterwards passes into a tube containing chips of copper or some other substance for drying and purifying; it then condenses in a receptacle.

The difficulty of obtaining a complete transformation of acetylene into ethylene and afterwards into ethylsulphuric acid is very evident.

There is also another process possible. Instead of shaking the acetylene directly over the hydrogen, one of the indirect methods given above can be employed, viz, absorb the gas by a dissolution of protoxide of chromium in ammonia, added with chlorhydrate of ammonia. The peroxide of chromium formed will be then reduced to protoxide by the iron and zinc acting on the sulphuric acid.

It is also proposed to transform acetylene into biniodide of ethylene $C_2H_4I_2$ by the action of a water solution of iodhydric acid. This liquid, which boils at $175^\circ C.$, can be transformed direct into alcohol by the action of water, zinc, and oxide of zinc 10 to 15 weights of water heated under pressure 140° to 150° . $C_2H_4I_2 + Zn + H_2O = C_2H_5-OH + ZnI_2$.

The liquid cooled and submitted to distillation gives pure alcohol. The iodide of zinc is thus transformed into iodhydric acid. Acetylene can also be transformed into ethylene and ethylene into ether iodhydric C_2H_5I by heating to $100^\circ C.$ with concentrated iodhydric acid. This ether, slightly heated with acetate of silver, produces acetic ether. $C_2H_5I + C_2H_3AgO_2 = C_2H_3(C_2H_5)O_2 + AgI$.

Finally, the acetic ether, saponified by the watery potash, produces alcohol and acetate of potassium. $C_2H_3(C_2H_5)O_2 + KOH = C_2H_5-OH + C_2H_3KO_2$.

The iodide of silver and the acetate of potash obtained as by-products can no doubt be employed for some chemical purpose.

Among these various methods, some are of great value to demonstrate in the laboratory a synthesis of alcohol, but at present none of the methods can actually be employed for industrial or manufacturing purposes at a remunerative cost price. It is indisputable, however, that if one of these methods could be practically applied, it would produce a revolution in the alcohol industry.

JOHN K. GOWDY,
Consul-General.

PARIS, *November 20, 1899.*

TRANSLATION OF LETTER FROM M. BERTHELOT TO CONSUL-GENERAL GOWDY.

PARIS, *November 5, 1899.*

The transformation of acetylene into alcohol has been accomplished by experiments purely scientific, which I published from 1854 to 1865 in the minutes of the Academy of Science as well as in the *Annales de Physique et de Chimie*.

Acetylene having been within the past few years produced economically, divers efforts have been made to prepare by its use and those of the elementary components, alcohol for industrial purposes; this problem I solved scientifically, but I am uninformed if the process of manufacture has been practically adopted.

BERNE.

In investigating the subject of the manufacture of alcohol from acetylene, I have communicated with many men of science and with other parties who know something of the subject. Their answers may be summed up in this one sentence: The alcohol industry need not anticipate any opposition, so far as the manufacture of alcohol from acetylene is concerned.

One of the greatest authorities on this question in Europe is Professor Maercker, who is at present living in Halle-an-der-Saale. I communicated with him, and the following is a translation of his answer:

It is indeed true that alcohol can be produced from acetylene. To do it, acetylene, through the addition of hydrogen, has to be changed into ethylene. Then let the ethylene be absorbed by concentrated sulphuric acid, and the result will be ethylsulphuric acid. Then, when water is added, the result will produce sulphuric acid and ethyl alcohol. The latter then may be procured by distillation. In a theoretical manner, alcohol can be produced from acetylene; but in a practical way it can not. The production of alcohol in this manner is so far-fetched and costly, compared with the present mode of production, that the alcohol industry can rest assured, and need not anticipate any opposition so far as alcohol from acetylene is concerned.

Next, I give a translation of a letter written me by Prof. F. A. Rossel, an authority in Switzerland. He says:

In answer to your inquiry, I can tell you that Professor Berthelot, of Paris, has proven the theoretical possibility of producing alcohol from acetylene. The formula is $C_2H_2 + 2H_2O = C_2H_5(OH)$. In this process only traces of alcohol were produced, the aggregate not measuring 100 grams of alcohol. If acetylene be conducted through a solution of mercuric chloride ($HgCl_2$), the result will be traces of C_2H_4O , which, through the reduction of hydrogen, results in alcohol. $C_2H_4O + H_2 = C_2H_5(OH)$. This being only a scientific laboratory experiment, it has no practical value.

Literature on the subject comprises:

(1) *Handbuch der Chemischen Technologie* von Rudolf von Wagner, zwölfte Auflage, Bearbeitet von Dr. Ferdinand Fischer; Leipzig, 1886.

(2) *Handbuch der Spiritus Fabrikation*, von Max Maercker (Dr.); Berlin, 1894.

(3) *Metall-Chemische Revue*; 1898; No. 15.

From No. 2, above mentioned, I quote the following, translated:

Oil-creating gas, ethylene, conducted through sulphuric acid, will result in ethylsulphuric acid. ($C_2H_5HSO_4$.) If then diluted with water, the reaction or counterformation will produce sulphuric acid and alcohol. As ethylene gas, through distillation, is produced from coal, it being the illuminating part of coal gas, we can indeed make claim that alcohol can be produced from coal. The result of the production of this kind of gas being so meager and the cost so high—also the work so intricate—the alcohol industry has nothing to fear from the competition of coal for this purpose.

From the above-mentioned *Handbuch* (No. 1), I quote also:

In the near future, it may be necessary to create a fourth group, containing all those substances which may serve to produce in a synthetical manner a so-called mineral alcohol. Berthelot, Paris, in 1855, proved the formation of alcohol from ethylene and water. $C_2H_4 + H_2O = C_2H_5O$.

The continued shaking of any oil-creating gas with sulphuric acid will absorb the gas through the forming of ethylsulphuric acid. The fluid, when diluted with water, will, by distillation, prove to be a watery alcohol. Acetylene (C_2H_2) and hydrogen create ethylene (C_2H_4), and, as acetylene is created through the direct union of hydrogen and carbon, the artificial creation of ethyl alcohol out of its elements is obtainable.

For the present, at least, the synthetical production of alcohol is of theoretical interest only.

In closing, I shall speak of a new process of producing absolutely 100 per cent pure alcohol by means of calcium carbide, as is claimed by the *Metall-Chemische Revue*, 1898, No. 15 (No. 3, above mentioned). I translate:

Lately, it has been found that common, low-grade spirits can be changed into absolutely pure alcohol in a simple manner by means of calcium carbide. The contact of spirits which contain water (diluted spirits) will produce acetylene gas,

through which the water will be replaced partly and partly combined with chalk. The action can best be proven by placing some powdered calcium carbide in a bottle, and then adding spirits containing more than 10 per cent of water. The latter solution should weigh four times as much as the powdered calcium carbide. (In other words, the proportion in regard to weight is 75 per cent spirits containing more than 10 per cent water and 25 per cent powdered calcium carbide.)

The intense development of gas will soon cease, after which the bottle should be shaken every two or three hours for the following half day. Let the bottle stand quiet for the next twelve hours, after which the liquid can be distilled, proving to be a 100 per cent alcohol, free from any water.

If the above method be correct as stated, a fact which from conversation with various men of science I have no reason to doubt, it is, of course, of great interest, and particularly so in the United States, provided it is not already known to scientists. I understand it is merely an experiment, and can learn of no firm or company that manufactures 100 per cent pure alcohol for commercial purposes.

The originals of the letters and authorities above quoted are on file at this consulate.

ADOLPH L. FRANKENTHAL,

BERNE, *September 18, 1899.*

Consul.

BERLIN.

The development of alcohol from acetylene was demonstrated as a laboratory experiment by different German chemists several years ago. In 1897, Dr. N. Caro, who is at the head of a chemical institute and testing laboratory at No. 1 Roon Strasse, in Berlin, published a thesis which claimed to describe a practical process for the synthetic production of alcohol from acetylene on what he then thought would prove an industrial scale.

This process was taken up and worked out thoroughly by several leading experts in acetylene chemistry; but, so far as can be ascertained, all have reached the same conclusion, viz, that, while alcohol may be produced by this method, the process is so costly and the yield of alcohol so meager that its cost is about ten times that of alcohol produced in the ordinary way.

Various other experiments by processes differing more or less from that of Dr. Caro have been made, but from the best information that can be obtained all have yielded negative results—that is, while interesting as scientific experiments, no process yet discovered, or at least known here, can produce alcohol from acetylene at such cost and in such quality as can render it capable of competing, as a commercial product, with alcohol produced by older and ordinary means.

Dr. Caro's dissertation has a certain scientific interest, and it is herewith transmitted,* with the explanation that its claims have not been confirmed by other chemists, nor, so far as is known, has it yet found any industrial application. Even he admits that it, while interesting as a step in an important new field of chemical research, has no value as an industrial process.

BERLIN, *August 26, 1899.*

FRANK H. MASON,
Consul-General.

SUPPLEMENTARY.

Since writing my report of August 26 on the production of alcohol from acetylene (as a product of calcium carbide), I have received from Dr. Fr. Liebetanz, of Düsseldorf, who is recognized as the foremost German authority on acetylene chemistry, a letter, which is herewith translated as follows:

To Consul-General MASON,
Berlin.

HONORED SIR: In response to your favor of the 23d of the month, I take pleasure in giving you the desired information.

An industrial production of alcohol from acetylene is not to be found in Europe, as the expense of such a process would be too great.

There is no question of an invention, as it is a simple chemical process.

However, the production of alcohol from calcium carbide from acetylene or ethylene by a special process can be patented.

According to my knowledge there exist two such patents:

(1) American patent No. 608652, of Frederick R. Coudert, jr., New York.

(2) English patent No. 1208 (1898) of the Alcohol-Syndicate, London.

Both patents are founded upon the production of ethyl alcohol, and the last-mentioned patent also from vinyl alcohol.

The literature about these manufactures is only in the form of patent papers and of notices. A compilation of them is to be found in my work *Textbook of Calcium Carbide and Acetylen Technick*, second edition.

Respectfully yours,

LIEBETANZ.

As will be seen, the foregoing letter confirms the substance of my recent report that, while the synthetic production of alcohol from calcium carbide is an easy and interesting chemical process, it has no practical value, on account of the costliness of the product, and, as Dr. Liebetanz states, no industrial application of the process has been made in Europe.

BERLIN, *September 4, 1899.*

FRANK H. MASON,
Consul-General.

* Forwarded to correspondent.

FRANKFORT.

From the best sources of information at my disposal, I learn that alcohol is not made from acetylene in Germany. In *Das Acetylen in der Technik*, by Ahrens, published at Stuttgart, in 1899, on page 50, the following appears:

The manufacture of alcohol according to Berthelot's synthesis is without a future; the possibility of producing aldehyde, etc., is there; but this is also of no practical importance.

In the *Electro-Chemical Journal*, 1895-96, on page 30, an essay is published by F. Krüger, to which the *Journal* refers as follows:

Relative to the often exaggerated rumors of the economic importance of a production of alcohol from acetylene, a computation is made according to which, even if a theoretical production were realized, the process would be too expensive. But, what is worse, it was not possible, in any manner, to obtain even a single drop of alcohol from acetylene.

In *Dingler's Polytechnical Journal* of 1899, vol. 311, page 162, appears the latest report on alcohol from acetylene, but only a theoretical process is given, according to which 1,000 kilograms of carbide of calcium could produce the same quantity of alcohol that would be obtained from 12,000 kilograms of potatoes.

FRANKFORT, *September 15, 1899.* RICHARD GUENTHER,
Consul-General.

MANUFACTURE OF WINE AND PIQUETTE IN SOUTHERN FRANCE.

The frequent inquiries from the United States touching the manufacture of wine and piquette, prompted no doubt by a desire to utilize the methods adopted in old wine-producing countries in districts of our own where grapes are largely produced, have induced me during the harvest of this year to examine the systems used for producing wholesome and, technically speaking, pure wine.

My intention at first was to confine this report to the item of "piquette" (a product comparatively unknown in the United States, but which is attracting much attention there), because the residue of grapes is utilized here to an extent undreamed of in our country; but I believe it would be of interest to explain the primitive, but at the same time thorough and remunerative, method by which the wine itself is made.

From investigations during the late harvest, I am led to conclude that the system of wine making common in Piedmont is superior to that generally employed here. I shall therefore restrict my description to this method, indicating later the reasons for its superiority.

The grapes are placed in large vats and thoroughly bruised until the resulting liquid covers the mass. They are left thus from twenty-four to forty-eight hours. The object is to produce an elementary fermentation, which materially increases the production of juice. The vat has a discharge a few inches from the bottom, and at a height of from 6 to 8 inches above is a small orifice with a wooden plug. The grapes are squeezed by pounding with flat iron or stone weights, attached to convenient handles, and all the juice is drawn off from the lower discharge and placed temporarily in casks. When the mass is well pressed by this method, all the juice is poured back into the vat upon the residue, the mixture is stirred to render it of equal consistency, the cover of the vat is put on, a woollen or other warm covering is spread above it, and it is left to ferment. The time of fermentation varies from year to year, and depends upon the degree of maturity of the grapes, the weather during which they have been harvested (wet or dry), and, of course, the quality of the grapes. After the fifth or sixth day of fermentation, the plug above mentioned is drawn out and a glass filled with the liquid. If it shows a degree of muddiness or contains particles of residue, the wine is not drawn. When the liquid is fairly clear, the wine may be considered sufficiently "made" to be drawn into casks. These are placed in the cellar filled to the bung, but with the bung left open. The second fermentation usually lasts a month or more.

During the first fermentation, the mixture in the vat should not be disturbed at all; and here I am compelled to speak of the difference in the two systems above mentioned and in their results. The local (Nice) custom has been to place a sliding cover in the vat, braced against the ceiling, with the object of keeping the residue continually "under water," as it were, and each day to stir up the entire mass. I have been enabled to verify that by this method the wine does not show when fermentation is complete; hence, the results are uneven and often disastrous. Again, the fact of the bubbling liquid being exposed to the air in the top of the vat causes a certain acidity and loss of alcoholic strength. By the Piedmontese method, the fermentation pushes the residue upward until by degrees every particle of solid substance comes to the top, leaving the clear wine below, prepared to show when the degree of fermentation is such that any delay in drawing will result in the wine becoming acid, and losing the mellowness which the grapes should naturally impart to it.

I visited a district near Nice where a very bad harvest had been

gathered, and all the proprietors, save one, had made their wine by the usual local method. This one had adopted the Piedmontese method, and his wine alone failed to turn to vinegar. In explanation of their manner of proceeding, I was told that "if we allow the residue to come to the top, it turns acid and we lose it." The residue is passed through a press, and the juice procured is either thrown with the "first wine" or else used as "second wine." In the former case, it certainly greatly deteriorates the product, and in the second instance it is a most unpalatable drink. This brings me to the utilization of the residue for the manufacture of "piquette."

Before drawing the wine, and upon removing the covering of the vat, it will be observed that the entire residue has risen to the surface, and that the upper portion thereof, quite dry, has formed a crust. This is carefully removed to the depth of 2 or 3 inches all round, for the reason that, having been in contact with the air, it has become acid, and it would communicate this acidity to the piquette about to be made. This done, and the wine drawn as explained above, a quantity of water equal to the quantity of wine drawn is poured upon the residue. Were no further ingredient added, there would be a repetition, in a degree, of the first fermentation, with a product having about 4° of alcoholic strength. But the object being to extract everything possible from the residue by means of a heightened fermentation, and to attain an alcoholic strength sufficient for the preservation of the new product, cane sugar in crystals is used to the extent of 2 kilograms (4.4092 pounds) of sugar to each 100 liters (26.417 gallons) of the water that has been used. Each addition in this proportion will cause the alcoholic strength of the piquette to rise 1°—that is to say, taking 4° as the normal strength, to obtain an alcoholic strength of 8°, one would add 8 kilograms (17.6368 pounds) of the sugar to each 100 liters (26.417 gallons) of water. The sugar is dissolved in additional water upon a brisk fire, and poured, when boiling, into the vat. This is then covered as before, and the fermentation is allowed to proceed until, as in the case of the wine making, the liquid issues from the plug hole entirely clear. The piquette is then treated as was the wine.

I had occasion to investigate a case in which the piquette had not been used immediately after making, but had been employed in the manufacture of a wine for bottling. It was placed in casks and allowed to finish its second and rather feeble fermentation. It then had a pale rose tint and was, to a slight degree, "sparkling." It gave 9° of alcoholic strength. To each 8 liters (8.4536 quarts), 1 liter (1.0567 quarts) of heavy, black Spanish wine, costing here about 55 centimes (11 cents) per liter, was added, and the whole was left in casks from October until the following March, as in the case of

the wine itself. It was then cleared by the introduction of gelatin, bottled, and the result was a delightfully mellow table wine of a brilliant tint, slightly sparkling, and to all intents and purposes a digestible and wholesome beverage. I am told that piquette thus treated has been preserved in bottles as long as ten years, and that it has been found to improve with age.

The culture of the grape and the manufacture of wine have increased to such an extent in the United States that I have thought the present report might be useful to persons to whom the process may appear a complicated matter, or to those who may not be aware of the value of the residue when treated in the manner described above.

HAROLD S. VAN BUREN,

NICE, *November 28, 1899.*

Consul.

GERMAN VINTAGE OF 1899.

The prospects for a good vintage during the past year were at first excellent. Under the influence of the beautiful spring weather, the vines were soon covered with luxuriant foliage, and were sound and healthy. At the beginning of the blossoming period, however, when warm and sunny weather is of the utmost importance, a spell of rain set in, causing the period of floescence to extend to the middle of July. On this account, a great number of blossoms dropped off, and vine diseases made their appearance. The fine weather, however, which extended from the middle of July to the beginning of September, benefited the grapes greatly, and had the heat continued throughout the month of September the vineyards would have yielded a very satisfactory product; but as it was, September brought such incessant rains that a ripening of the grapes was hardly possible. The fine weather of October again changed the situation, so that, after all, the vintage of 1899 is not a total failure. The new wine is now in the casks and the period of fermentation has already passed.

The quantity will average about one-third of a normal vintage. Owing to the high prices that have ruled from the start, the wine growers have been in a measure compensated for the small crop.

In Rhenish-Hesse, the must of early grapes brought from \$1.07 to \$1.30 per 317 gallons. The early Portuguese grapes of the Haardt brought from \$1.80 to \$2.85, and those of the Nahe, \$3.57 per 40.23 quarts, while those of the middle Rhine brought \$7 per cwt. The must gauges from 65° to 80°, according to the Oechsle system, with an acidity of 9 to 13 per thousand.

The general gathering of the grapes began in the first part of October.

In Rhenish-Hesse, the crop averaged one-third to one-half of a normal year. The prices for the poorer qualities averaged \$119 per 317 gallons, while the better qualities brought \$215 and higher per 317 gallons. The must varied greatly, gauging from 70° to 150°.

From the Rheingau only one-eighth of an average crop is reported, the quality, however, being very satisfactory. The must gauges from 80° to 95°, with an acidity of 10 to 15 per thousand. Prices average \$19 to \$26 per ohm (40 gallons).

The middle Rhine produced about 15 to 20 per cent more than last year. Prices ruled high, \$4.45 being paid on the average for 40.23 quarts. The must gauged from 55° to 85°, with an acidity of 11 to 16 per thousand.

Along the valley of the Ahr, must varied greatly, gauging from 55° to 104°.

From the valley of the Nahe, only one-sixth to one-fifth of a normal vintage is reported. The must gauged from 70° to 90°, with an acidity of 11 to 14 per thousand. Prices averaged from \$4.75 to \$7.15 per 40.23 quarts.

The wine growers on the Moselle, Saar, and Ruhr have been the most successful this year. The Moselle wines can command almost any price. This year's quantity amounts to about one-half of a normal year, and in quality ranks between the vintages of 1896 and 1897. Already the prices range from \$175 to \$285 per 264 gallons on the average, but as high as \$333 and \$380 have already been paid.

In the Haardt hills, the quality was satisfactory, and the must brought from \$71 to \$95 per 264 gallons.

In Baden, Franconia, and Wurttemberg, the quality is medium.

WALTER SCHUMANN,

MAINZ, *December 1, 1899.*

Consul.

PHYLLOXERA IN SWITZERLAND.

The vineyards of the Canton of Vaud, the greatest wine-producing State of Switzerland, have suffered greatly this year, as well as last, from the inroads of phylloxera; and the wine growers of all French Switzerland are greatly concerned over the present situation. In this connection, I have translated the following extract from a newspaper report of a recent session of the Canton council of state at Lausanne:

The special report on the subject of phylloxera establishes the fact that the situation during recent years has grown steadily worse throughout the Canton of Vaud. The actual money cost to the cantonal treasury of fighting the disease

in 1898 was 150,541 francs (\$29,054); this was increased during the current year to 215,000 francs (\$41,495). These figures afford food for reflection. A wise treatment of the matter permits of no further delay in reaching the solution that imposes itself upon us—*i. e.*, the reconstitution of the most seriously diseased portions of all the vineyards of the Canton of Vaud. It seems best to the council of state to facilitate the planting of American vines in the seriously affected sections, in order that some of the vineyards may be protected from the attacks of the insect. During the spring of 1900, we shall dispose of from 120,000 to 125,000 American vine plants. The council of state proposes to use all of these in the district of Coppet and to continue later with a new supply in other vineyards of La Côte.

The State reserves to itself the exclusive right of importing and delivering American "vine plants" and positively forbids the introduction into the Canton of grafted or rooted sprigs.

From the above extract, it is probable that the Canton of Vaud will soon be in the same condition as the Canton of Geneva; that is to say, her vineyards will be largely planted with American vines, which are not subject to this disease. It is believed that this will bring about in the end a marked deterioration in the fine and delicate white wines for which the Canton of Vaud is famous; but it appears to be the only remedy and will probably have to be adopted throughout the whole great Canton, unless some other effective cure for phylloxera is discovered.

Swiss wine growers claim that the wine produced from grapes grown on American vines is of a much rougher quality than that of the Vaudois and other native vines, and this is one of the principal causes of their objection to the introduction of American vines. Another very natural reason is that the vineyards thus transplanted will produce no grapes for at least three years. Thus, a great loss will be sustained.

Under the present laws of the Canton of Vaud, American vines can not be introduced into that Canton, but the grand council will ask the Confederation to permit the introduction of American vines under strict State inspection, as has already been done in the Canton of Geneva. These vines will be for the most part secured from nurseries in France.

BENJ. H. RIDGELY,
Consul.

GENEVA, *December 19, 1899.*

FAILURE OF OLIVE CROP IN SOUTHERN EUROPE.

The olive crop in Italy, France, and Spain is practically a failure. As compared with an average crop, it will hardly reach 30 per cent in the opinion of well-informed judges. In some sections, the fruit is still upon the trees, but enough is known to warrant the expectation of a steady rise in prices. The Italian olives are the greatest

sufferers from the pest to which existing conditions are due, the south of France being also affected, and Spain in some localities. The damage has been wrought by a fly known as the *Mosca olearia*, which deposits its eggs in the green fruit. A grub is hatched, and this grub destroys the olive, or at least so injures it that the oil is very inferior in quality, and is especially bad for table use.

For some years, edible oils have been declining in price, a fair average for fifty years being 38 cents per kilogram of 2.2 pounds. Last year, European oils fell to 19 and 23 cents per kilogram, and Tunis oils went to even 15 cents. Prices have so far recovered that good local oil is at 38 cents and Tunis oil at 28 cents. The effect of the shortage upon prices of olive oils for mechanical purposes is well shown by the contract prices arranged for by the French navy. The oils must be pure and pass severe tests. Last year, the contracts ran from \$11.96 to \$12.54 per 100 kilograms (220 pounds). Contracts for similar oils were let a day or two ago at \$19.10 for the same quantity.

In Europe, olive oil is used very generally for the purposes for which lard oil is employed in America. The upward tendency of prices is encouraged by a shortage in the cotton-seed crop in America and a deficient crop of oleaginous grains in Africa and India.

I understand that virtually no effort is made here to counteract the influence of the olive pest. The operations of the insect are regarded as a dispensation of Providence, to be accepted in meekness of spirit. To the lay mind, it would seem that the fly could be successfully fought with American spraying machines, provided an effective chemical combination could be found to put in the water. These flies will be in evidence for some years to come, and appear to be good subjects for American ingenuity and enterprise.

ROBERT P. SKINNER,

MARSEILLES, *December 15, 1899.*

Consul.

DEMAND FOR WHEAT IN FRANCE.

Consul Skinner sends from Marseilles, December 1, 1899, the following copy of a letter from Messrs. Bendit Limburger & Co., 21 rue Sylvabelle, Marseilles:

We are desirous of establishing connections with some first-class American grain exporters for the importation of American hard wheat into this market, and, as our efforts in this direction have thus far met with no satisfactory results, we make free to address you the present, in order to inquire if it is in your power to place our request before the proper party in the United States.

This description of wheat, commonly known as goose wheat, is in considerable demand in our market. It is employed by the millers in this district for the manu-

facture of semolina, which is used in the production of macaroni, etc.; it is better adapted for this purpose than any other quality of wheat.

Russia, India, Africa, and, to some extent, Chile have been furnishing our market with this commodity hitherto.

A clear, yellow-colored, and well-cleaned wheat will always command full prices.

Mr. Skinner adds:

I have already communicated to Messrs. Bendit Limburger & Co. the facts set forth on page 400 of CONSULAR REPORTS No. 230. There is no doubt that wheat of the quality described would meet with a steady demand in this market. I might add, in this connection, however, that a local firm other than the one named above complains to me that certain transactions with American exporters have proved unfortunate, because of the arrival of the grain in bad condition and not as represented by sample.

Many American cereals are unknown here. I have conversed with several brokers, who say that if they had samples of the new American crop they could make sales. This difficulty could be overcome and a step in advance of every other grain-exporting nation would be taken if our produce exchanges, notably at Chicago and New York, would send to this market annually, after the new crop is in, a complete set of standard samples. To reach the trade of Marseilles, two sets should be sent—one to the *Chambre Syndicale des Minotiers et des Fabricants de Semoules de Marseille*, 4 rue des Templiers; and the other to the *Chambre Arbitrale des Cereals de Marseille*, sitting at the bourse. The utility of the suggestion is shown by the fact that the French consul at New Orleans has forwarded some few samples to the *Syndicate des Minotiers*, by request. Samples should be selected with scrupulous care, indorsed by the exchange sending them, and sealed by the French consul, in order to be fully accepted here. The idea is applicable not only to cereals, but to cotton, oils, etc. I am extremely desirous of having this matter considered and acted upon, and will be happy to see that samples are properly placed.

WHEAT FOR EDIBLE PASTES IN FRANCE.*

The 2 bushels of Texas wheat, called Nicaragua wheat, sent for the purpose of being tested and examined in regard to adaptability for the manufacture of macaroni and other edible pastes reached this consulate December 20, 1899. I sent about 5 pounds of it by the first mail to Marseilles, where it was subjected to a careful examination by dealers in the special kinds of wheat used for the manufacture of edible pastes. A second package was sent to the large

* See CONSULAR REPORTS No. 230 (November, 1899), p. 400.

macaroni works of Gilibert & Tezier, Valence, and a third to Mr. Edwin W. Sorrell, at Paris. I sent packages to manufacturers of macaroni in this city, but they declined to express an opinion, as they never handle the wheat.

I translate the answer from Gilibert & Tezier:

Macaroni can be made out of this wheat, but of an ordinary quality, because it can not contain a great deal of gluten. It contains considerable soft wheat, and some of it is mouchetés—that is to say, black about ends. It seems to us that wheat more evenly hard, and not mouchetés, ought to be grown in Texas.

The wheat which we want would bring at Marseilles about 18 francs (\$3.47) per 100 kilograms (220.46 pounds).

Mr. Edwin W. Sorrell, an American, who has given much attention to this subject, gave the wheat forwarded to him to an expert, who examined it thoroughly and reported as follows:

ITS FORM.

Long grains, indicating a high average of gluten.

A horny or corneous form; the best variety of hard wheat. It is, in fact, very hard.

Grains regular in size.

But very little impurity; a few grains of tender, white wheat.

Unfortunately, there are a few spotted grains. This defect, which ought not to be inherent in the quality, diminishes the value somewhat, for it will necessitate more time for sifting to eliminate the black spots from the semolina.

ANALYSIS OF THE GLUTEN.

Paste very rapidly obtained.

Gluten very easily separated; very homogeneous and elastic. The analysis shows damp gluten, 30 per cent; dry gluten, 10 per cent.

These proportions occur only in the superior grades of hard Russian wheat.

With well-sifted semolina, there could be made from this wheat edible pastes carrying 13.33 per cent of gluten. This wheat would therefore make the best qualities of edible pastes.

The above report, coming with Mr. Sorrell's indorsement, should leave no doubt as to the value of this wheat for the manufacture of edible pastes, for no man in Europe is more competent than he to pronounce an opinion on this subject.

The gentleman to whom I sent specimens of this wheat in Marseilles reported verbally that it would find a ready market in that city at 16 francs (\$3.08) per 100 kilograms. Dealers have spent one week investigating this subject in Marseilles. Their first report was favorable. This morning they confirm the first opinion.

JOHN C. COVERT,
Consul.

LYONS, *January 2, 1900.*

INACCURACY IN AMERICAN GRAIN INSPECTION.

It is of the highest importance that our relations with our French wheat customers be based upon mutual confidence. With the exception of some special qualities, France usually raises more wheat than she consumes, and the wheat imported is required only in order that flour manufacturers may secure a return of the amount of duty paid on the foreign wheat used in flour exported from France, the regulation being, in effect, a bounty upon flour marketed outside of France. The country is therefore not dependent upon American crops under ordinary conditions.

Three protests have been formally lodged with me in regard to the condition of a cargo of wheat arriving from New Orleans; a like complaint has been made against wheat from Galveston, and an English trade paper, noting a communication from its Marseilles correspondent, says: "We may add that London importers have been making similar complaints." These facts suggest that whatever accuracy the criticisms may possess, they are not confined to an isolated case or to a single city.

As my correspondents explain, wheat from New Orleans is purchased in Marseilles on the faith of the certificates of inspection issued by the board of trade of that city. The exporter appears to have no responsibility for quality of the grain beyond the production of an "official" certificate of inspection, which being in proper form binds the buyer to accept the consignment. It necessarily follows that unless the trade organizations issuing certificates exercise proper care in making the statements conform to the facts, they must lose credit and drive business into other channels. These certificates have been accepted the more willingly in certain quarters because of the impression that an "official" certificate was a document issued by the United States Government. In France, boards of trade and chambers of commerce derive their authority from the Government itself, and the belief that similar conditions prevailed in the United States was natural and no doubt led in the first place to the lodging of complaints at this consulate.

My own interest in the subject arises from no wish to prejudge the question of fact in the cases actually presented, but from a desire to show the imperative necessity of preventing all cause for criticism of our export trade. I touched upon the same subject in my annual report for 1899,* citing a case of dispute concerning a certificate of inspection given for a consignment of grease. The

* To be printed in the forthcoming volume of Commercial Relations.

difference of opinion was doubtless entirely honest on both sides. The certificate, according to the importer's understanding of the composition of the goods he had ordered, was in regular form, and the goods should have come in free of duty. They turned out to be heavily dutiable, whereupon the seller disclaimed all responsibility, the inspector asserted that his certificate related only to color and not to component parts, and the American trade organization to which the case was finally referred declared that the commercial designation used by the inspector had no definitely recognized significance.

I have recommended in my annual report that boards of trade take measures, after the gathering of the crops, to procure standard samples, properly sealed and authenticated, and file them, carefully labeled, with the chambers of commerce and millers' syndicates on this side of the ocean; or our Department of Agriculture might effect an organization whereby grain intended for export could be inspected and classified by Government experts, and their certificates made the basis of our foreign trade, replacing the certificates of private corporations. If this is too much, it is possible, at any rate, for commercial organizations to determine upon national standards for produce of all kinds, and issue documents that will be at once certificates and guaranties. The attention of these bodies may properly be called to this important matter, that they may at once see to it that their own certificates are carefully scrutinized, and that persons and firms now giving out inspection certificates based upon authority conferred by these organizations be held to strict account. We have a large and increasing Mediterranean trade, and I am most anxious that it may be still further enlarged. To this end, it is essential that weak spots in our system be pointed out and corrected.

I send herewith translations of two of the complaints which have been filed with me.

ROBERT P. SKINNER,

MARSEILLES, *December 11, 1899.*

Consul.

MARSEILLES, *December 8, 1899.*

HON. ROBERT P. SKINNER,

United States Consul.

DEAR SIR: We beg to inform you of the complaints which have been made here recently against the careless manner in which certain Galveston and New Orleans grain inspectors execute the duties intrusted to them. The confidence placed in them has been betrayed, and, while we ourselves do not believe that there is anything but carelessness at the bottom of the recent occurrences, we have repeatedly been obliged to listen to accusations of fraud against these inspectors by local millers and dealers, who believe that they have been prevailed upon to issue false

certificates. We are doing our best to dissipate this feeling, but the fact remains that confidence can no longer be placed in the certificates of inspection issued in the above-mentioned ports.

We have already pointed out to you the advisability of getting corporations such as produce exchanges or boards of trade to send standards to the different corporations on this side entitled to receive them, such as millers' syndicates. Thus, with each new crop, local dealers would know exactly what they might expect when buying on conscientiously signed inspection certificates.

For the last ten or twelve years, inspection in the United States has been such that European merchants bought from American exporters without troubling themselves further about the quality of the wheat they were to receive, putting implicit faith in American grain inspectors. We fear, though, so far as Galveston and New Orleans are concerned, that recent events have put a stop to this, and that until steps will have been taken to restore confidence American inspection certificates will no longer be accepted here.

We would also point out to you that numerous American exporters, among whom are first-class houses, knowing that they have no responsibility for the quality of the wheat beyond giving inspection certificates, have become somewhat remiss in the execution of their contracts, inasmuch as they take it for granted that the goods are really what the certificate declares them to be. They ought to be satisfied for themselves that goods are in prime shipping condition; but, in all probability, they do not look at the grain, and thus give the inspectors an opportunity to be careless in their work.

In the interest of American commerce, we venture to suggest that your observations on this subject directed to the proper authorities in the United States will not be amiss.

Yours very truly,

BENDIT LIMBURGER & Co.

MARSEILLES, *December 9, 1899.*

TO THE CONSUL OF THE UNITED STATES,

Marseilles.

SIR: I send you a sample* from a consignment of hard winter wheat No. 2 Kansas, discharged from the steamship *Olbia*, with a certificate of inspection from the inspector at New Orleans.

I call your attention particularly to the fact that for a long time the wheat as delivered has not at all corresponded with the guaranty of the certificates. The grain which I have just received leaves a great deal to be desired. It contains a large proportion of foreign matter, and the number of small kernels is much too large. Finally and most grave, this wheat is not perfectly sound. It has suffered before shipment, as proved by the "burned" grains found in large quantities. Should I be called upon to classify this wheat, I would not hesitate to say that it is inferior by from 10 to 15 per cent as compared with standard hard winter No. 2 Kansas, such as should be delivered after examination by an official inspector.

You can understand how my trade interests must suffer from such a delivery, and future relations will be exceedingly difficult if a change for the better is not made in the existing system of verification at the port of shipment. For my own part, I prefer to renounce further operations until a new order of things is established, since to do otherwise is to submit to heavy loss.

GUILLAUME ARTAUD.

* Transmitted to the Department of Agriculture.

GRAIN ELEVATOR AT AMSTERDAM.

There has recently been completed a grain elevator in Amsterdam, the only one in the Netherlands. It is near the timber harbor; its length is 125 meters (410 feet) and its width 33 meters (108 feet). It was built by the city and leased for a term of fifty-five years at 6,000 florins (\$2,400) a year to Messrs. Korthal Altes. For the building itself a space of 2,200 meters (7,218 feet) was reserved. The capacity is from 8,000 to 9,000 lasts (16,000 to 18,000 metric tons); the greater part will be used for the storage of grain in silos; the ground floor alone, with a storage capacity of 1,500 lasts (3,000 tons), being intended for the storage of grain and seeds in bags.

Steam and sailing vessels will be discharged as follows:

The cargo is weighed by hand and put over the ship's side in tipping buckets, which deposit it on the traveling bands. It is then brought to its place by mechanical power. The velocity of transport is calculated so as to insure an easy transfer of all the grain, however fast it may be discharged. A maximum capacity of 200,000 kilograms (440,920 pounds) per hour has been fixed, and two kinds of grain may, if necessary, be discharged simultaneously from the same vessel.

The traveling bands run in a channel in front of the building up to its center, where the grain is deposited on transverse travelers that take it to the elevators. These work the grain up to the top of the building, whence it can be conveyed to any chosen division by means of the traveling bands running over the silos.

The emptying of the silos, or bins, is thus conducted: Below the conical bottom of the silos are shafts, through which the grain is transmitted to traveling bands running on the ground floor; it is again raised to the top by the elevators, and thence may be carried off in any desired direction.

If the object is merely to stir the grain, it is taken to one of the top travelers and thrown into another silo; but it may also be sent first through a shaft to the cleaning or weighing machine, and then up again by means of a small elevator to another silo or through a shaft.

The grain can be discharged at the side of the harbor in wagons or lighters at the rate of 100,000 kilograms (220,460 pounds) per hour. For damaged grain, silos are arranged in what are called hospital cells.

FRANK D. HILL,
Consul.

AMSTERDAM, *November 18, 1899.*

SCHWEITZER SYSTEM OF BREAD MAKING IN PARIS.

There has recently been created in Paris a society for establishing in all the populous centers of France combination milling and baking houses, operated by machinery known as the "Schweitzer system." The object is to furnish 100 kilograms of nutritious and digestible white bread from 100 kilograms of grain at the lowest cost of production.

The model establishment, which is at La Villette, Paris, opened its doors to the public on June 15, 1899. It may be visited on Sundays by those desirous of studying its operation.

At a meeting of the society, December 2, a report was made concerning the success of the effort to supply good bread at a low price to the Parisian public. In the bakery at La Villette alone, the daily sales rose from 1,900 francs (\$366.70) on September 1 to 4,000 francs (\$772) on November 30, and a corresponding increase was noted in the branch houses, which are most liberally patronized in the wealthy quarter of Paris. Official analyses by the National Agromonomical Institute and by the municipal laboratory of Paris demonstrate that the Schweitzer bread contains more nutritive nitrogenous properties than ordinary bakers' bread and more than double the phosphates in the latter. The bread, known as family bread (*pain de menage*), is sold to the working classes at 25 centimes the kilogram (4.82 cents per 2.2046 pounds)—that is, 10 centimes per kilogram (1.93 cents per 2.2046 pounds) less than the usual price.

The Villette establishment is a building of iron and stone 157 meters (515 feet) long, situated on a canal, and constructed at a cost of about 1,000,000 francs (\$193,000). A steam engine of 150 horsepower supplies the power and produces the electricity necessary for lighting purposes and for charging the accumulators of the delivery wagons.

Just as coffee is better if freshly roasted and ground, so, Mr. Schweitzer says, bread is better if made from freshly ground wheat. The flour in this mill, which is a part of the establishment, is ground only in quantities sufficient to meet the daily needs of the bakery.

The wheat arrives in a boat, which is moored in the canal; elevators hoist it into bins, whence it is carried by an immense elevator to the top of the mill and turned into the different cleaning and separating machines. After all foreign substances have been removed and the grains of wheat have undergone a thorough brushing and washing, they are clean and shiny; but the grooves of the wheat

sometimes retain a little dust. This is completely eliminated by a Schweitzer appliance, which, seizing each grain lengthwise, splits it exactly in the groove.

The wheat thus cleansed passes into the mill, composed of flat, circular steel grinders, grooved in such a manner that they accomplish the decortication of the kernel and its granulation into meal at the same time. These grinders are movable, but do not touch; so that, instead of crushing the wheat and producing a flour in which the starch only is retained, the outer and harder portion of the wheat, containing gluten and other nutritive properties, is retained in the flour. The bran alone is expelled.

Attached to the mill are the works for kneading the meal, water, and yeast into bread. All of this is done mechanically, the works being separated into three stories. Special yeast is prepared in the upper story in rooms heated in winter and cooled in summer. The yeast, flour, and the salted and filtered water are carried down by machinery into kneaders in the form of half cylindrical tubs, rotating on two pivots placed in the axis of the kneading troughs, so that the tubs may be placed at a lower or higher angle in order to accelerate or retard the kneading.

One person can attend to two Schweitzer kneaders, regulating the distribution of the dough, and thus the kneading of 2,000 kilograms (4,409 pounds) of dough per hour is accomplished.

The steel arms of the mixing and kneading machinery, some of which are stationary and others mobile, stretch and work the dough much better than hand power.

The wheat, salted water, and yeast automatically enter one end of the tub, and dough in an endless skein of pale yellow issues from the opposite end. This dough finally falls on tables on the ground floor, where it is weighed and made into bread of every shape and dimension. Small wagons are charged with the shapes, which then go to the raising room. Each floor has a fermenting room kept at an even temperature.

The dough, after raising, is carried by wagons into the baking room, where it is placed in Schweitzer ovens heated by gas from retorts arranged in such a manner that the gas does not enter the oven, and the heat is so regulated that the baking operation goes on automatically.

Twice a day, once before dawn and in the afternoon, ten large two-horse wagons (which will be used until the electric carriages shall have been built) distribute the bread in the different depots of the Société Parisienne in Paris.

In connection with this model establishment is a laboratory for the chemical examination of the samples of wheat submitted for pur-

chase. These are, upon their arrival, ground and passed through a seive by a small hand bolting mill, invented by Mr. Schweitzer, which determines immediately the nutritive volume of the grain in gluten and nitrogenous matter.

Mr. Schweitzer has mills, ovens, and kneaders of various dimensions that may be worked by machinery or hand power. The latter system enables the farmer to grind his own wheat and make his bread from an unadulterated and wholesome product. It is regarded as particularly adapted to the colonies.

The Schweitzer system will be on exhibition at the exposition of 1900.

W. P. ATWELL,
Consul.

ROUBAIX, *December 21, 1899.*

SWEDISH CROPS OF 1899.

Minister Thomas sends from Stockholm, December 22, 1899, the following report upon the crops of Sweden in 1899, compiled from statistics just issued by the royal central statistical bureau:

The crop of 1899 is classed as "below the average." For the preceding twenty-five years (1874-1898), the crop of only one year—1881—has been classed equally low.

The crop of wheat is good, of barley ordinary; but the crops of all the other cereals, and more especially the crop of potatoes, are much below the average. As to fodder, the amount harvested is not sufficient for home consumption in half of the provinces, especially in southern and western Sweden.

The following table gives the quantity of each of the principal crops of Sweden for 1899, in round numbers. For convenience of comparison, the crops of the preceding ten years are placed in an adjoining column.

Crop.	1899.	Average, 1889-1898.
	<i>Bushels.</i>	<i>Bushels.</i>
Wheat	4,433,000	4,285,000
Rye	21,453,000	22,237,000
Barley	11,698,000	14,444,000
Oats	53,541,000	63,383,000
Mixed grain.....	8,863,000	8,909,000
Pease	1,250,000	1,491,000
Beans	193,000	204,000
Vetches	579,000	732,000
Total	101,998,000	115,685,000
Potatoes	33,952,000	54,087,000

I would add that the "mixed grain" of Sweden, given in the above table, is generally made up as follows: Oats, about 45 per cent; barley, about 30 per cent; and pod crops, about 25 per cent.

The total weight of all the grain and pod crops of Sweden for 1899 is 2,069,000 metric tons; the average weight of the same crops for the ten preceding years (1889-1898) was 2,316,000 tons; showing that the crop of the present year falls below the average crop in weight by no less than 247,000 tons.

The actual values of the grain and pod crops of Sweden for 1899, reckoned in United States currency, are estimated as follows:

Wheat	\$4, 797, 200
Rye.....	21, 359, 600
Barley	9, 272, 800
Oats	24, 012, 800
Mixed grain.....	5, 896, 000
Pod crops.....	2, 278, 000
Total.....	67, 616, 400

MERCHANT MARINE OF SWEDEN.*

Owing to the geographical position of Sweden, almost all articles of interchange with foreign countries are conveyed by sea. Calculated according to value of the entire import, 52 per cent is carried by Swedish vessels, 5 by Norwegian, 39 by other vessels, and 4 per cent by land; while of the export, 42 per cent falls to Swedish vessels, 7 to Norwegian, 49 to other vessels, and 2 per cent crosses the frontiers. The Swedish merchant service at present numbers 1,008 steamers of 277,492 tons and 1,784 sailing vessels of 277,582 tons.

The Royal Board of Trade supervises the merchant marine in this country, and, in order to facilitate the shipping, it has recommended and suggested several reductions in the ordinary fees, such as consular fees, fees for the register and record office of shipping and seamen, fees for gauging ships, etc.

The materials used by the Swedish ship and marine engine builders are, as a rule, manufactured at the Swedish steel works, and "Swedish material" is always specified. Prices for steel plates vary from \$55 to \$65 a ton, and the same apply to balks and L iron. The timber and lumber used is generally Swedish, with the exception of teak and a few foreign woods of better class.

The workingmen at the shipyards are paid weekly at the following rates:

* See Special Consular Reports, Vol. XVIII, Merchant Marine of Foreign Countries. This report was received too late for insertion among the others.

Workmen.	Wages.	Workmen.	Wages.
Pattern makers.....	\$6.43	Riggers.....	\$5.10
Fitters, turners, etc.....	5.10	Coppersmiths and plumbers.....	5.10
Riveters.....	4.29	Platers.....	4.82
Ship carpenters.....	5.36	Iron molders.....	5.63
Joiners.....	5.63	Brass molders.....	5.63
Ship-bottom painters.....	4.29	Laborers.....	4.29
Blacksmiths.....	4.82		

The average monthly wages paid at this port on steam and sailing vessels are:

Class.	Wages.
First mates.....	\$27.00 to \$30.00
Second mates.....	19.00 to 22.00
Able seamen.....	12.00 to 13.50
Boatswains.....	9.50 to 10.50
First engineers.....	40.00 to 48.00
Second engineers.....	21.50 to 24.00
Third engineers.....	16.00 to 17.50
Firemen.....	12.00 to 13.50
Coal passers.....	9.50
Carpenters.....	16.00 to 17.50

All the war ships owned and in course of construction have been or are being built in the country. This does not seem to affect the cost of constructing merchant vessels.

STOCKHOLM, *January 9, 1900.*

EDWARD D. WINSLOW,
Consul-General.

SHIPBUILDING IN GERMANY.

The people in the United States do not yet fully realize the tremendous progress being made by Germany in all directions.

Only a few years ago all, or nearly all, the steamships employed in the trans-Atlantic service of Germany were built at Glasgow or Belfast, or some other English port. Now these conditions are rapidly changing. Germany builds her own vessels. The enterprise of the shipyards of Stettin, Hamburg, Danzig, and Kiel bears witness to this fact. A steamship wholly constructed and equipped in Germany—the *Kaiser Wilhelm der Grosse*—has for several years had the best record for quick passages across the Atlantic, and has not been surpassed by the latest product of English marine architecture—the *Oceanic*.

An article which appeared in the Brunswick Landeszeitung, in

the edition of November 24 last, advocating an increase in the German navy on account of the increase of the country's commerce, says:

Germany's development is shown not only by the increase of our exports to over 4,000,000,000 marks (\$1,000,000,000), but also by the constant improvement in the position of Germany's commercial fleet and in shipbuilding. Of course, in these respects England is yet far in advance. For its standing as a commercial power, it has to thank its insular position and its peaceful colonial policy, already existing more than a hundred years, which brought it into immediate intercourse with the farthest countries of the earth.

According to the latest review of the commercial fleets of the world, made in the autumn of 1899, Germany has made recently a greater advance than England. Germany's ocean steam fleet gained in the last year 248,000 gross tons and 149,000 net; the English only 100,000 gross and 20,000 tons net. An increase like that of the German commercial fleet has been shown by no other country.

On the 30th of September, England had 1,347,000 tons of commercial ships in construction; Germany, 199,000. The difference is still very great, but one must reflect that ten years ago German shipbuilding had almost ceased, and that our coast and harbors lie far from the coal and iron districts.

All other states remain far behind Germany in shipbuilding. Italy has 97,000 tons in course of construction; France, 91,000 tons; the United States, 68,000 tons. Moreover, France is the only one of all the cultured countries which still busies itself considerably with the building of sailing ships; the greater half of those newly built are of this class, while Germany and England can not be said to build such vessels at all. Among the steam fleets, for the last ten years, the German takes the second place; of course, at a great distance behind the English. Among the sailing fleets, the American as well as the Norwegian stand in advance of Germany. It is not clear to us how much of the American fleet is really an ocean fleet and how much is employed on the five great lakes. The Norwegian sailing fleet is only apparently superior to the German, because the greater part of it consists of old and outranked vessels.

In the autumn of 1899, the merchant marine of the four leading countries stood as follows:

Country.	Steam.	Sail.	Total.
	<i>Net tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Great Britain and colonies.....	6,758,000	2,662,000	9,420,000
Germany	1,166,000	548,000	1,714,000
United States.....	672,000	1,201,000	1,873,000
France	516,000	309,000	825,000
Total	9,112,000	4,810,000	13,922,000

This extraordinary increase in our commercial fleet has been produced only by the growing interchange of German merchandise with foreign countries. German commerce is making steady conquests, in connection with its improving industry, in far latitudes, where formerly the English and the French had sole control. If this peaceful advance is to continue—if Germany's position in foreign countries is to become firmer and its industrial importance greater—there must be behind this commerce a naval force commanding respect.

In the partition of the Asiatic world, we must gain a position, in order to open new markets for our commerce. Without a strong fleet, this place will not be conceded to us.

The foregoing article shows that Germany now occupies the position which the United States for many years enjoyed, being second to England in ocean steam transportation. Moreover, in spite of many obstacles, Germany has obtained this position in the short period of ten years. Compared with many other countries, its coast line is insignificant:

On the North Sea, from the mouth of the Ems, the western boundary, to the Danish border on the east, the distance is 150 nautical, or sea, miles. If there be added to this the courses of the Ems to Emden (35 sea miles), the Jade and Wilhelmshaven (25 sea miles), the Weser to Bremerhaven (30 sea miles), and the Elbe to Hamburg (70 sea miles), the German North Sea mileage is 310 sea miles. The length of the East Sea from Kiel to the Danish boundary amounts to 160 sea miles and to the Russian boundary 620 sea miles. The sea boundary of Germany at most is about 1,100 sea miles, and the greater part of this lies on a comparatively inland sea—the Baltic, or East, Sea. At the same time, Germany only possesses two ports of great commercial importance, namely, Hamburg and Bremen. Again, its harbors and shipyards are situated at a distance from its coal mines and iron industries, which principally lie in Westphalia and the Rhine Province, viz: Hamburg, 380 kilometers (237 miles); Bremen, 266 kilometers (166.25 miles); Kiel, 492 kilometers (307.5 miles); Stettin, 662 kilometers (413.75 miles); Danzig, 1,030 kilometers (643.75 miles).

This rapid development of shipbuilding in Germany is to be attributed to the encouragement given by the Government to the shipbuilding interests, through liberal subventions allowed the different commercial companies. In Germany, the doctrine of "let alone," if it ever had any existence, has been supplanted by the doctrine of protection. It is believed that what benefits one class benefits all, and that what benefits the greatest number without injury, or with the least possible injury, is the true principle of government. Since I have been here I have heard no hue and cry about class legislation, but each department of activity accepts, as if it were a matter of course, the degree of encouragement and protection accorded it.

At the present time, every branch of industry is flourishing—agriculture, manufacture, and commerce.

TALBOT J. ALBERT,
Consul.

BRUNSWICK, *December 8, 1899.*

SHIPBUILDING AT NAGASAKI.

I have to report the building and delivery at this port of a twin-screw steamer—the *Awa Maru*. She was built by the Nagasaki Dockyard and Engine Works for the Nippon Yusen Kaisha line of European steamers.

The accommodations and furnishings for first and second class passengers on this line of ships are said to be equal in every respect to the best class of Atlantic or eastern steamships.

Materials have been ordered for the building of two other steamers for the Nippon Yusen Kaisha, to be of the same dimensions and accommodations as the *Awa Maru*, but to steam 15 knots per hour. Besides these, the works have now in course of construction four other steamers, varying from 160 to 270 feet in length; the last mentioned being a twin-screw steamer for the Shanghai-Hankau trade.

DESCRIPTION OF THE "AWA MARU."

Length over all, 463 feet; length between perpendiculars, 445 feet; breadth molded, 49 feet 2 inches; depth molded, 33 feet 6 inches; gross tonnage, 6,309 tons; net tonnage, 3,911 tons; dead-weight carrying capacity, 7,150 tons; displacement at 25 feet, 12,150 tons; indicated horsepower, about 4,000, giving a speed on trials of about $14\frac{1}{4}$ knots; first-class staterooms, 12, for 24 passengers; second-class staterooms, 5, for 20 passengers; special steerage, 2 rooms for 12 persons; ordinary steerage, accommodation for 208 persons.

The double bottom extends the full length of the ship. Electric light is fitted throughout, and a fine patent refrigerator, with a large cold-storage accommodation, is provided. The ship has two masts, fore and aft, schooner rig, ten derricks of 6 tons each, and one 30-ton derrick

CHARLES B. HARRIS,

NAGASAKI, *December 13, 1899.*

Consul.

STEAMSHIP LINES TO ROTTERDAM.

As I frequently have inquiries from manufacturers and business men in the United States regarding steamship connections between Rotterdam and ports in our country, I give below a complete list of the lines, with the names of their agents here and at home:

Holland-America Line.—Combined passenger and freight steamers between Rotterdam and New York weekly; the same company runs

a steamer every ten days between Rotterdam and Newport News; address at Rotterdam, Holland-America Line, Poortgebouw, Feye-noord; address at New York, Holland-America Line, 39 Broadway.

Neptune Line.—Sends weekly from one to three freight steamers to Baltimore; agents at Rotterdam, Hudig & Blokhuyzen; agents at Baltimore, Drexel, Rauschenberg & Co.

Mobile Steamship Company.—Runs monthly freight steamers to Mobile, Habana, Puerto Rico, and Cienfuegos; agents at Rotterdam, Kuyper, Van Dam & Smeer; general manager at Mobile, W. C. Taylor; agent at Mobile, G. S. Taylor; agents at San Juan, José T. Silva & Co.; agent at Cienfuegos, José M. Alonso; agents at Habana, Dussaq & Co.; agents at Matanzas, J. Lombardo & Co.; agents at Cardenas, Lluria & Co.; agents at Santiago de Cuba, Brauet & Co.

Cosmopolitan Line.—Weekly to Philadelphia; agents at Rotterdam, Hudig & Pieters; agents at Philadelphia, Peter Wright & Sons.

Keystone Line.—To Philadelphia; agents at Rotterdam, Ruys & Co.; agents at Philadelphia, C. B. Richard & Co.

Holland-Boston Line.—To Boston; agents at Rotterdam, William H. Muller & Co.; agents at Boston, Furness, Withy & Co.

Johnston Blue Cross Line.—Monthly to Norfolk; agents at Rotterdam, Ruys & Co.; agents at Norfolk, William Johnston & Co., Limited.

North American Transport Line.—From Norfolk and Newport News to Rotterdam biweekly; agents at Rotterdam, Van Santen & Co.; agents at Norfolk, the North American Transport Company.

Gulf Port Steamship Line.—From New Orleans and Galveston to Rotterdam biweekly; agents at Rotterdam, Van Santen & Co.; managers at New Orleans and Galveston, Charles F. Orthwein's Sons.

Texas Transport and Terminal Company's Line.—From New Orleans and Galveston to Rotterdam; agents at Rotterdam, Van Santen & Co.; managers at New Orleans and Galveston, the Texas Transport and Terminal Company.

Cuban Steamship Line.—From Rotterdam to Cuban ports and New Orleans; agents at Rotterdam, Van Santen & Co.; agents at New Orleans, A. K. Miller & Co.

In addition, the following companies send irregular steamers between the United States and Rotterdam:

Charleston Transport Line.—Agents at Rotterdam, Van Santen & Co.; managers at Charleston, Street Brothers.

Barnard & Co.—Savannah to Rotterdam; agents at Rotterdam, Van Santen & Co.

S. LISTOE,
Consul.

ROTTERDAM, December 15, 1899.

RAILWAY SUPPLIES IN FRANCE.

After correspondence and a conference with the director (chief of administration) of the Chemins de Fer de l'Etat, I have been assured that bids for railway supplies coming from American sources will receive serious consideration.

From the *Clauses et Conditions Générales pour l'Exécution des Fournitures des Chemins de Fer de l'Etat* I quote the following extract:

ARTICLE I.—GENERAL RULE.

All business proposed relative to the supply of materials necessary for the State railways, whether it be done by private contract or by open competition, is submitted in its every particular to the following rules:

ARTICLE II.—CONDITIONS TO BE FULFILLED BY PERSONS WISHING TO SUBMIT BIDS.

No one is permitted to compete for award of contracts who is not capable of giving a guaranty for the faithful execution of contracts. To this end, each bidder is required to present a certificate, stating his ability, and to deposit a regularly negotiated bond, except as provided for in last paragraph of Article IV, which follows hereafter, and other exceptions allowed by laws, decrees, and rules now in force. Foreign bidders can be admitted to competition. Bidders whose establishments are outside of France (French territory) and foreign bidders will be admitted only when a bond supplied by a French bank has been accepted by the director.

This administration operates 1,758 miles of road.

I was also informed that inquiries coming through this consular office will receive attention.

GEORGE H. JACKSON,

LA ROCHELLE, *December 11, 1899.*

Consul.

THE SIMPLON TUNNEL.

On November 13, 1898, work was begun on the Simplon Tunnel. The contract calls for its completion in five and one-half years, and the price to be paid is 69,500,000 francs (\$13,413,500). It will have a length of 20 kilometers (12.4 miles), and will be the longest tunnel in the world. When completed, it will be the third one connecting Italy with outlying countries by direct rail, and will accomplish a saving of 77 kilometers (43.5 miles), or from 7 to 8 per cent on travel from Paris to Milan, as compared with the Mount Cenis or St. Gothard tunnels. The Mount Cenis Tunnel has a length of 13 kilometers (8 miles) and the St. Gothard a length of 15 kilometers (9.3 miles).

When in the fifties the wonderful project of drilling the Mount

Cenis Tunnel was undertaken, fathered by the courageous Italian Minister of State, Cavour, no machines for drilling were in existence, and it was calculated that a period of twenty years would be necessary for every 5 kilometers (3.1 miles) of tunnel drilled. Then Engineer Sommeillier, in charge of the work, constructed the first drilling machine, and, although crude, it was satisfactory enough to accomplish ten times the work done by manual labor, and enabled him to finish the tunnel in eleven years. The St. Gothard Tunnel was finished in from eight to nine years.

The Simplon Tunnel begins in Switzerland near the little town of Brig, in the valley of the Rhone, Canton Wallis, and ends in the valley of the Diveria, on the Italian side near Isella. It will be perfectly straight, except for a small curve at the ingress and egress. The contract for the tunnel provides for a fine of 5,000 francs (\$965) per day if the time limit is exceeded, while a gratuity of the same amount per day is to be given if it is finished before the stipulated period. A little computation will show how disastrous strikes will be. A strike of ten days has just ended.

The fundamental principle in tunneling always has been to drive the hole, excavate, and follow it up with the finishing masonry, making provision, of course, for ventilation, which is generally sufficient at first, but which becomes insufficient when the work progresses towards the center, when the incoming fresh air mixes with the outgoing gases. The method employed by Engineer Brandt, who has been in charge of the undertaking, is to drive two holes parallel within the radius of the excavations, leaving a dividing line, one hole being excavated about 17 meters (55¾ feet) in advance of the other. These are built for a single track, and later on the dividing wall can be broken through for double tracks if necessary. At distances of about 200 meters (656 feet) transverse connections between the tunnels are made through the dividing wall and are provided with doors. To obtain sufficient ventilation, powerful air blasts are blown into one side of the tunnel, which return through the other side of the divide, and thereby conduct outward all foul air and bad gases. When the air in the interior increases in heat, it is cooled by showers of cold water which has been led from the exterior of the mountain under high pressure. Through practical experiments in the mines of Spain, Engineer Brandt has proven that air at 50° C. (121° F.) by this means can be reduced to 15° C. (59° F.). These same streams furnish 1,000 horsepower for driving drills. The miners, therefore, always work in an artificial atmosphere of cool, fresh air.

Engineer Brandt's invention is a hydraulic rotary drilling machine, by which it is hoped to complete the tunnel in less than contract

time. It is used singly and in battery form. Prominent engineers come from far and near to examine this powerful mechanism.*

Another of Mr. Brandt's inventions is a machine for loosening and removing the débris after the explosions and blasts. It throws a powerful stream of water in a jerky manner into the stones loosened by the force of the blasts, thereby washing away the dirt. This makes excavation easier. These machines run on rails, and when in use follow each other in rotation.

The historical museum of the Kaiserlich und Königlich State Railroads in Vienna possesses the first hydraulic rotary machine invented by Brandt, which he used in tunneling through the Arlberg, in Austria, in 1867.

During November, in which ten days were lost on account of the strike, there was drilled at the south side 144 meters (472 feet) and at the north side 123 meters (404 feet). The total, since the commencement of the work, is 3,574 meters (about $2\frac{1}{4}$ miles)—2,148 meters ($1\frac{1}{3}$ miles) at the north side and 1,426 meters (nine-tenths of a mile) at the south side.

On November 22, 1899, the telegraph brought the news of the death of Mr. Brandt.

ADOLPH L. FRANKENTHAL,

BERNE, *December 12, 1899.*

Consul.

TELEGRAPH LINE FROM BUDAPEST TO LONDON.

On the 4th instant, direct telegraph communication was opened from the capital of Hungary, the granary of Europe, to London. Besides serving to gratify the national ambition of the Hungarians, it is explained by the editor of the *Magyar Nemzet*, the semiofficial organ of Budapest, to be of immense value to the grain dealers here in their competition with United States dealers for the Liverpool market.

Hitherto, says this organ, it has taken three or four hours to transmit a message from London via Vienna or Berlin to Budapest, owing to the number of messages intended for those two places which had to pass over the same wire. The time required for replying to a message from London, therefore, amounted to six or eight hours, which meant the arrival in London of the reply to a request, say, for price of flour about 8 or 9 o'clock in the evening, when it was too late to decide in its favor; and the New York dealer, whose offer came in earlier, was always able to "make the deal."

*An illustration of the machine accompanied the report, and is filed for reference in the Bureau of Foreign Commerce.

Apart from this consideration, the advantage of the new telegraphic communication is clear from the following:

In the wheat-growing season, prices are determined in New York; but when the wheat is once stored and the consumption season of about ten months sets in, prices are first quoted in Liverpool and are reported from there to New York. Hitherto, the noon telegram from Liverpool has arrived in Budapest about 4 o'clock, just as the bourse is closing, with the result that the quotation had almost no effect; while under the new conditions the exchange of telegrams between London and Budapest occupies only half an hour, and the effect on the bourse is felt.

The work of carrying through the new telegraphic communication devolved upon Hon. Peter Szalay, chief of the postal telegraph section in the Hungarian Ministry of Commerce, who began negotiations with the British consul-general in this city in 1896. By dint of successful arrangements with Austria, Switzerland, and France, the matter was accomplished. It is generally regarded here as a long step towards the occupation by Hungary of that position which a country so rich in agricultural and mineral resources should occupy.

FRANK DYER CHESTER,

BUDAPEST, *December 21, 1899.*

Consul.

ELECTRIC LIGHTING IN DUBLIN.

A scheme for extending the electric-lighting system of the city of Dublin has just received the approval of the municipal council of the city. Application has been made to the local government board to hold sworn inquiries as to the necessity of the work and the desirability of carrying it out. If the local government board approves of the scheme, as it undoubtedly will, it will empower the corporation of the city of Dublin to apply for a loan of \$1,272,000 to carry out the extension. As soon as the loan is raised, the specifications will be prepared and the various contracts advertised. It is thought that the corporation will be in a position to receive tenders by March 1 next.

The estimated capital expenditure is as follows:

Feeding and distribution.....	\$515, 000
Public arc lighting	202, 000
Works at pigeon house.....	480, 000
Meters and house connections.....	75, 000
Total.....	1, 272, 000

This sum includes the estimated cost of the whole plant, together with the work of laying mains, trenching, etc. The following are the estimates for some of the more important details:

For buildings, foundations for plant, chimney, etc.....	\$100,000
Engine-house plant.....	179,500
Boiler-house plant.....	58,350
Pipe and feed tank.....	17,500
500 lamp-posts, etc.....	55,000

The plan, briefly, is as follows:

The supply works are to be erected at the pigeon house, which is at the entrance of the harbor. The current is to be delivered to the distributing center at Fleet street through three trunk mains sufficient to supply 100,000 8-candlepower lamps, all alight at one time.

I will obtain copies of contracts as soon as they are advertised and forward them to the Department.

In conclusion, I may say that I know of no reason why a large proportion of this work should not be secured by our manufacturers, as in Dublin there is already a large power station for the tram company in which American machinery has been installed, which has given satisfaction.

JOSHUA WILBOUR,
Consul.

DUBLIN, *January 8, 1900.*

PROPOSED ELECTRICAL ENTERPRISE IN VENICE.

At the request of a New York export association (to which the letter has been forwarded), Consul Johnson sends from Venice, under date of December 19, 1899, copy of a memorandum from one of the engineers interested in the projected company for supplying electrical energy to Venice, as follows:

MEMORANDUM.

At the request of the Chamber of Commerce of Padua for information regarding the utilization of the waters of the River Cellina and part of the River Piave for the purpose of transferring electrical energy to Venice and vicinity, the following is submitted:

The Cellina, with an annual average capacity of 12 cubic meters (423.7 cubic feet) per second, and in two falls of the combined height of 100 meters (328 feet), is able to supply Venice with electrical power equivalent to 10,000 horsepower at a distance of 95 kilometers (59 miles). The Government is ready to grant the concession and the work can be begun immediately.

The Piave offers more favorable conditions. From the Piave would be derived 15 cubic meters (529.7 cubic feet) per second; that is to say, one-third of its capacity in the dry season, which would serve to feed Lake Santa Croce at a level of 380 meters (1,246 feet) above the sea. This lake, which acts as a reservoir, contains

100,000,000 cubic meters (3,531,660,000 cubic feet) of water, of which 20,000,000 cubic meters (706,332,000 cubic feet) would always be at the disposal of the hydraulic motors. The falls in this system would be two, with a combined height of 225 meters (738 feet). It would be possible to include a third fall 70 meters (229.6 feet) high. The water of overflow would serve for the irrigation of the plain between the Piave and the Livenza. From the two falls of 225 meters (738 feet) to Venice, 70 kilometers (43 miles) distant, 27,000 horsepower can be conducted. By making use of the third fall, this figure could be increased by 8,400 horsepower.

The existence of Lake Santa Croce will enable the energy to be doubled—that is to say, make it 70,000 horsepower—during the hours of work. Another distribution from the Piave will be provided during the night. Application has been made for the Government concession, but the concession will not be obtained for at least a year.

A private company has been formed to carry on operations on both of these rivers and is now negotiating with various banking houses for the necessary capital. The names of the prime movers in the enterprise are as follows: Counts N. and A. Papadopoli, Venice; Commendatore Giuseppe Da Zara, Padua; engineers, Ernesto Breda, Milani, and Colle, care of the above.

English capitalists have sent a representative to Venice to arrange, if possible, for the cooperation of English promoters of similar enterprises. It is not unlikely that their offers will be accepted, in consideration of the high standing of the firms represented.

DEMAND FOR COAL IN FRANCE.

The report which reaches me to the effect that the *Inca* is loading with American coal at Newport News for the Marseilles market indicates that the information which I forwarded to the Department on December 28, 1898,* may yet lead to happy results. When the question was raised last year of the possibility of introducing American coal into this market, the freight charges seemed to offer an almost insurmountable obstacle; but it appears improbable that this difficulty will continue, if American miners determine to secure a share of the Mediterranean trade. The coal commonly sold here is poor in quality and high in price. This is always true, and especially so of free-burning soft coals and anthracite. Quality alone should give the American product considerable favor.

The present observations are prompted by the abnormally high prices of coal in the French market and the hope that the facts may instruct the American trade. There is at this moment in France a coal famine, attributed to several causes, among which are the strikes inaugurated and threatened among the French miners, the withdrawal of British miners from the collieries to join the army, the demand in Great Britain for domestic coal for manufacturing and emergency purposes, and the great demand for coal in France to supply manufacturers who are rushed with hurry exposition orders. Thousands of French operatives are either out of work or

*See CONSULAR REPORTS NO. 223 (April, 1899), p. 649.

working intermittently because of the coal scarcity, and the burden to business is such that there is talk of repealing the duty on coal until the stringency is relieved.

A Marseilles broker of highest standing communicates to me the following information as to prices:

The price of the best Cardiff coal delivered here in bunkers and in bond is fixed by the syndicate at 35s. (\$8.50) per ton. A very small quantity of coal (I understand about 500 tons) could be bought on the quay (duty paid) at 40 francs (\$7.72) per ton; but, apart from this, there does not seem to be any coal available for sale in the interior. I learn on good authority that the price of coal at Cardiff (best quality) has gone up to 30s. (\$7.30) per ton, and that there is a prospect of it touching 40s. (\$9.73).

The reasons given for the extraordinary rise are various, one of them being the short time worked by the men, owing to the high wages earned; the loss in output attributed to this cause being as much as 25 per cent.

In an official communication, the Paris, Lyons, and Mediterranean Railway Company says:

In the present crisis which menaces the industries of Lyons because of the insufficiency of the stock of coal, and because of the impossibility of renewing the same in the Loire district, the Government has called upon the Paris, Lyons, and Mediterranean Company to relieve matters, which the company has arranged to do. It has authorized the mines in the Department of Gard with which it has contracts to deliver coal to the industrial establishments of Lyons, and has consented to a provisional reduction of from 4 to 5 francs (77 to 96 cents) per ton on freight rates; so that, as soon as the offer is confirmed by the minister, a uniform price of 8.50 francs (\$1.64) per ton will be applied to shipments of coal made from any station in Gard or Bouches du Rhone (Marseilles) to any of the stations in Lyons.

Concerning the state of affairs in Great Britain, I translate the contents of a dispatch to a local trade paper:

For some days, the price of coal has been rising steadily in London. Ordinarily, coal sells in the city for 25 francs (\$4.83). It is selling to-day (December 28) at 37.50 francs (\$7.24). Dealers have been good enough to advise the public that next week the price will advance to 50 francs (\$9.65). The week following it will probably jump to 100 francs (\$19.30)—or rather it will cost nothing, because there will be none to obtain.

The coal dealers declare that they can do nothing, as the Government has requisitioned all available rolling stock for two months, to transport troops and war material. Moreover, every sack of coal that can be procured is being monopolized for the foundries at Birmingham, Aldershot, and Woolwich, and for the depot at Southampton.

The syndicate price for coal last year, at Marseilles, was \$5.71 free on board. The local port charges, custom-house dues, and light-erage amount to 86 cents per ton when delivered to vessels in port. The syndicate price for inland trade is higher, as the various charges, including duty, amount to about \$1.08.

ROBERT P. SKINNER,

MARSEILLES, *December 29, 1899.*

Consul.

STRIKE OF WEAVERS AND COAL MINERS AT ST. ETIENNE.

The two principal industries of this district are temporarily arrested by strikes of the workmen. The ribbon weavers, to the number of 30,000, have struck work on account of the low prices paid by the employers. At first, those of the city, working both in the large manufactories and at home, left the looms; but in one or two days the contagion of disaffection spread to the outlying districts, and it may be said now that the whole ribbon industry of the region is at a standstill.

Although the decision to strike surprised many by its suddenness, it was not wholly unexpected, as for a long time the situation of the weaver was far from being enviable. Prices had fallen so low that many of those who owned one or two looms—and they are numerous—accepted orders only to keep their machines from deteriorating by lying idle. The weavers did not earn, with two looms, more than 90 cents a day; while the condition of the journeyman was much worse, his wages not exceeding on the average 30 cents a day. Besides—and this is one of the principal points in the present conflict—the “mise en train,” or putting the work on the loom, was not taken into account by the employer; and, as the weaver generally spends eight days in the above operation, and has to support certain expenses incidental thereto, his gains were very meager.

Numerous meetings have taken place between the members of the corporation on the one hand and the manufacturers on the other, but no satisfactory result has yet been reached. Propositions and counter propositions have been made with but little effect, and the prospects of an early settlement are not bright. The chances of arriving at an agreement would seem to be lessened by the want of accord between the employers themselves. Some are for yielding to the demands of the strikers, while others stoutly resist. In the meanwhile, the town council has voted \$2,000 as a relief fund for the most needy families of the weavers.

The other industry affected by a strike is coal mining. For eighteen months, the miners of the different companies have been applying for higher wages, and partial strikes have occurred, but of only a few days' duration. Within the last few days, the agitation has taken a more serious form. On December 26, the men struck, and up to the time of writing no settlement has been reached.

This strike is very unfortunate just at the present moment, as the iron trade is in a condition of prosperity such as has been seldom

witnessed in the country. The mines are pushed to their utmost to satisfy the ever-increasing demands for coal, and yet are not equal to the task; and foreign coal has to be imported by some of the largest steel works. English coal, for instance, has been brought into the district by way of Marseilles and the Rhone River, and paid for on delivery at the rate of from \$9 to \$10 per ton. The consequence of this scarcity of coal is an advance of 80 cents per ton on the home product; and the miners, taking advantage of the difficulties of the situation and the increase of the price of coal, have struck for higher wages.

It must be confessed that the present earnings of the men are not large. The picker receives from \$1 to \$1.20 per day; the posters, 90 cents; the pit-wagon rollers, 70 cents; overground laborers, 60 cents; sorters (boys and women), 30 cents. Further, 3 per cent of these wages has to be abandoned by the men to the sick and pension funds.

The miners have made the following demands on the companies: (1) An all-round increase of 10 cents in the wages; (2) recognition by the companies of the miners' syndicate; (3) an eight-hour day.

Up to the present, the companies have offered 6 cents advance in the wages, but have refused the eight-hour limit and are silent as to recognition of the miners' federation. These conditions were not considered acceptable by the men, and the mines remain closed.

As in the case of the weavers, the strike has spread to all the coal pits of the region, and it is computed that the number of men out on strike is about 25,000.

The consequences of the strike, for reasons already given, may be disastrous, not only to the iron and steel works of the district, but also to every industry depending on coal, such as electric works, gas works, the national arms manufactory, etc. The situation is, indeed, precarious, as but few industries have any stock of fuel; and I do not hesitate to affirm that if this strike lasts eight days longer, thousands of other workmen will be made idle.

HILARY S. BRUNOT,

ST. ETIENNE, *December 28, 1899.*

Consul.

COAL AT MALTA.

The methods employed at this port in dealing with calling ships differ in many respects from those elsewhere. Malta is one of the most important coaling ports in the Mediterranean, and consequently there are many firms here dealing in coal, of which there is at all times a large stock on hand, differing in quality from very poor to fair or good. Coal is brought here from England and is stowed

upon lighters, each having a capacity of from 30 to 32 tons. The experience of the local dealer has taught him how to stow these lighters so as to make up any combination as to weight and measurement he may desire, in order to make himself whole in case of a sharp bargain being driven. Most vessels calling for coal stop for so short a time that the masters have no time to make a very close inspection. I have known instances where coal dealers have pretended to supply "Nixon's navigation" coal, when, in fact, no coal of that brand had been in this port for several weeks on account of strikes in England or shortage of supply. But if proper precautions are taken, a supply of fair steaming coal may always be had.

In filling contracts for coal, it is the custom of the local dealers to sell or deliver by measurement, the ton varying from 40 to 44 cubic feet. The dealer always tries to confine his ton to 40 cubic feet if possible, regardless of weight, and often makes a good thing out of it by so doing.

Much vexatious argument between officers of the ships and the local agents would be saved if it could be stipulated in contracts that the ton required, regardless of measurement, must be 2,240 pounds, and that it must be delivered upon that basis. Our contract at present expires December 31, 1899. It calls for coal at 19s. 5d. (\$4.72) per ton at Malta. Recently, coal was supplied our ships when the dealer had to pay 26s. (\$6.33) per ton for the very coal he gave us at 19s. 5d. My argument has always been that the greater the discrepancy between the cost and selling prices the greater the precaution needed in buying.

JOHN H. GROUT,
Consul.

MALTA, *December 13, 1899.*

COAL IN GERMANY: CORRECTION.

I would call attention to an error in my report of November 14, 1899.* My informant, one of the largest commission dealers and brokers in coal and coke in this city, called on me yesterday and said he had erroneously stated the advance in the price of coke on new contracts for future delivery, as fixed by the coal syndicate of the Ruhr district, to be 60 per cent as against last year's contracts. The actual advance is 60 marks per carload of 10 metric tons, which would make an advance of only about 40 per cent in the price for coke deliverable to largest buyers—iron works, railroad companies, and large commission houses—in 1901. Contracts for 1901 are now

* CONSULAR REPORTS No. 233 (February, 1900), p. 133.

being made between the syndicate and these largest consumers in the following manner:

The advance of 60 marks (about 40 per cent on the former selling price) per carload (10 metric tons) is divided, and one-half of it put on deliveries made in 1901. The rest is put on the deliveries during 1900.

I am told that the syndicate fears discontent among the shareholders, because it acted imprudently in making contracts for coke delivery in 1899 for the year 1900. The price contracted for now seems very low, but it was considered excellent at the time when the arrangement was made.

As the large consumers must be sure of their supplies for 1901, they accept the syndicate's proposal, and thus pay 20 per cent more for all the coke delivered to them in 1900 than they are actually obliged to do under their contracts. This concession insures them the same quality of coke for 1901 at the price current in 1900.

The demand for coke is so heavy that English coke is being imported, which is not satisfactory, because it must be reloaded at port of entry on Rhine River barges, which breaks it up and adds to the cost.

The prices paid by smaller consumers have risen. Thus, I pay now $1\frac{3}{4}$ marks (41.6 cents) per 100 pounds for coke, against $1\frac{1}{4}$ marks (29.7 cents) paid last year. If the present boom in industrial circles is maintained during 1900, the price the small class of consumers will have to pay for coke a year hence may be very likely 2 marks (47.6 cents) per cwt., unless anthracite coal becomes generally used for heating purposes as a substitute for coke.

My informant also asked me to call the attention of our coal companies to the necessity of their working the German field at once if they mean to export coal to this section next season, as the navigation of the Rhine River usually opens about the middle of March, when supplies ought to come in.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *December 5, 1899.*

GERMAN ECHOES OF THE COMMERCIAL EXPOSITION.

When, a few months ago, the prospectus and plans for the exposition of the Philadelphia Commercial Museum were circulated in Germany, they were generally received with either indifference or ill-concealed resentment. The invitations which were extended to European delegates, offering the hospitality of the exhibition and an opportunity to participate in its proceedings, did something, but

not much, to allay the general suspicion that the whole enterprise was simply a scheme to foster American export trade at the expense of rival manufacturing nations in Europe. The debates in German chambers of commerce over the question of accepting or declining that invitation were mainly a rehearsal of the grievances of German exporters against the tariff, the Treasury and custom-house regulations, the too alert and searching activities of the United States consuls, and the defects in American merchandise. A memorable feature of that period was the reputation suddenly won by a member of the chamber of commerce at Cologne, through a specially tart and sarcastic letter which he had sent to Director Wilson in declining his invitation to attend the exposition as a delegate. There were not wanting business men and influential newspapers which took a broader, more liberal view of the case, and, as the expression of their judgment, a delegation, limited as to numbers, but of the highest ability and efficiency, was sent to represent German interests at the exposition. These delegates, most of whom made extensive journeys through the Southern, Western, and New England States, where they examined the principal industries of each section, have now returned and have, through newspaper interviews, lectures before boards of trade and various industrial associations, disseminated a vast amount of fresh and original information concerning the United States.

The effect of these reports—attended as they have been by the Samoan agreement and the Executive suggestion of a joint commission to study with scientific thoroughness certain questions which are now more or less at issue between the two countries—has been to change suddenly and to a surprising degree the tenor of newspaper comment and popular feeling toward the United States.

While the reports and lectures of the returned delegates deal with a wide range of subjects, which they have studied from somewhat different standpoints, there are certain conclusions concerning which they all agree. Among these is the judgment that the commercial exposition has been unexpectedly successful, and will exert an important influence upon the immediate future of international commerce. The German delegates were surprised by the numbers and high character of the representatives of other nations, particularly those from Great Britain, South and Central America, Australasia, and eastern Asia. They were intensely interested in the display of commercial samples from foreign countries, but think that, in consequence of the rapid change in styles and models, these will have for the most part only a temporary value. On the other hand, they have found the Bureau of Commercial Information at Philadelphia a model of completeness and efficiency, far in advance of any other institution of its kind yet organized in Europe, and a model for the immediate imitation of Germany and other exporting

nations which hope to maintain their place in future competition. The recent address in Berlin of Dr. Vosberg-Rekow, director of the association of German business men for the preparation of commercial treaties, was emphatic on this point, and an important meeting will be held on the 15th instant to discuss the part which the Imperial Government will be asked to take in supporting such an enterprise. The annual meeting of this powerful association, which acts as a purveyor of technical and commercial information for the Government, is fixed for the 19th and 20th of December. The principal topic before the meeting will be the proposed creation of a commercial museum and bureau of information, to be organized and managed on lines similar to those of the same institutions at Philadelphia.

Dr. Vosberg-Rekow's declaration that he had critically examined the processes of meat inspection and preparation at Chicago, and had found them admirable, is the first official testimony of that kind which has been able to check and silence—for the moment, at least—the long-sustained and tedious chorus of agrarian denunciation of American food products. His address was delivered before the Berlin Association of Merchants and Manufacturers, the members of which are generally men of superior intelligence, who are above the small jealousies and selfishness of trade and who realize how dependent are the industrial and laboring classes in German cities and manufacturing districts upon imported breadstuffs and meats.

In the course of his address, the speaker described his visits to American manufacturing establishments, and said:

When you read the figures which mark the present condition of industry and trade in the United States, you will conclude that they are smart fellows over there, and we must bestir ourselves if we hope to keep up with them.

When one examines the industries of America, one is amazed by the gigantic strength, the pristine power of that people, and realizes that Americans will play henceforth an important rôle in the economic affairs of the world. Nevertheless, a nearer examination shows that the development of American industry is not symmetrical or complete; there are gaps and points of weakness here and there. One industry may be very highly developed, while a correlative branch is primitive and neglected. One notices that American manufacturers are generally not broadly educated, though they are skillful and well informed in their separate specialties. They are highly original and ingenious, and when they seriously take up any special branch of manufacture, they soon explode and supersede the older methods of Europe. For all this, we need not greatly fear the Americans. Their training is too incomplete and one-sided to render them successful competitors in the long run.

Similar in tenor and deductions was the report of Herr Wirth, a linen manufacturer of Sorau, who had attended the exposition as the representative of the chamber of commerce in that busy city. In his report, which was delivered before a special meeting a few days ago, Mr. Wirth confirmed the principal observations of Dr. Vosberg-

Rekow, described the impression made upon him by the great factories of Pennsylvania and New England, the four-tracked railway lines crowded with traffic, and the resistless energy and enterprise of the people. "Great as industrial Germany has become," said the speaker, "she is yet far behind the Republic in natural resources and productive capacity." All that he saw emphasized the importance of closer and more friendly relations between the two countries, whose exchanges of raw materials and certain manufactured products are essential to the prosperity of both.

In opportune, though apparently accidental, accord with these manifestations of a friendlier spirit, there has appeared within the past few days an important contribution to the controversy concerning the danger to German farms and orchards through the invasion of insect pests of American origin. When in January, 1898, the sudden and drastic edict of the German Government concerning the San José scale practically paralyzed the import of fresh fruits from the United States, Dr. H. Dohrn, of Stettin, a scientific horticulturist of high authority, declared and gave reasons for his opinion that the new pest would, for climatic and other reasons, prove as harmless in Germany as the Colorado potato bug had been several years ago. As a result of the discussion which followed, the horticultural society at Stettin, of which Dr. Dohrn is an old and influential member, offered a prize for the best scientific treatise on the whole question of American insect pests in Germany.

The prize has just been awarded to Prof. Leopold Krüger, whose essay fills a volume of 174 pages and traverses the whole subject with the minute, painstaking thoroughness and fidelity which are characteristic of scientific research in Germany. The conclusions of Professor Krüger are summarized in the two following sentences:

(1) That until now, no insect of any importance or danger to agriculture has ever been introduced from North America into Germany.

(2) That the climatic differences between the two countries render highly improbable any noxious invasion from that country, so that there is no fact to justify or render advisable any panicky fear, such as now prevails concerning the invasion of the San José scale and was formerly awakened by the Colorado potato bug.

In the latest number of *Die Nation*, a leading scientific and literary weekly, Dr. Dohrn returns to the attack with a comprehensive review of Mr. Krüger's work, citing at length the convincing proofs therein set forth, points out the failure of the imperial health office in all its publications on this subject to make any allusion to the successful efforts of the California fruit growers to fight the scale with its natural insect enemies, and closes his article with the following challenge:

For some time, the expert officials of the imperial health office have, as has been clearly shown, become convinced that the San José scale is even less to be feared

in Germany than the potato bug in former times. Is it not high time, now that the grounds of this fear have been eliminated, to repeal the restrictive measures that were based upon that supposed danger?

The fruits coming from America—fresh as well as dried—are to-day subject to the same stringent regulations as in January, 1898. And there are to be considered not only the difficulties and delay, but likewise the important pecuniary charges which now inure to the benefit of certain officials who are charged with the wholly useless examination of these fruits in search of living or dead parasites. I remember a case in which a merchant at Stettin imported several barrels of American apples, worth altogether about 80 marks (\$19). For the inspection of this fruit he had to pay a fee of 8 marks (\$1.90), and for additional storage during the delay caused thereby 2 marks (48 cents); in all, 12½ per cent of the total value of the merchandise. I assume that in case of large shipments, this enormous charge would be proportionately reduced; but it would still amount to a heavy tax, which is expended for no useful purpose whatever. And if the Imperial Government does not of its own accord put an end to this system, it is to be hoped that the Reichstag will accord to the facts now established by this research the recognition to which they are so fully entitled.

The chamber of commerce at one of the leading Rhine cities has recently declared in its annual report that no German scientist has been able to prove whether the San José scale found on American fruit was alive or dead, and the frank scientific conclusions of Professor Krüger will help to give a final quietus to the San José scale as a menace to the horticulture of Germany.

FRANK H. MASON,
Consul-General.

BERLIN, *December 13, 1899.*

AMERICAN FURNITURE FOR SOUTH GERMANY.

Manufacturers of furniture should turn their attention to Bavaria, especially to Munich and its vicinity, as prices charged here, particularly for bird's-eye-maple and mahogany-veneered bedroom sets, are much higher than in the United States.

The styles in vogue are so different from those at home that they should be carefully studied. No double beds are wanted, and each set of beds must be matched by a wardrobe (patterns likewise to be carefully studied) and by two night stands, as well as a wash-stand, which last as here used is about the width of our bureaus or dressers and is supplied with a marble top. Night stands are also so supplied.

Such bedroom sets, without chairs, or with two chairs—usually cane bottomed and to match—retail for about \$200 and higher. The bird's-eye-maple sets manufactured in Michigan, western New York, and elsewhere in the United States, made to wholesale with chiffonier and bureau, each supplied with plate-glass mirror, at from \$50 to \$75, in good quality, could be put here at \$100, and be be-

yond competition if the German taste were first considered by the manufacturers.

Manufacturers of brass and iron beds (single), as well as of cribs, should combine with manufacturers of other household goods and open an exhibition here next year, when the Oberammergau Passion Play and the Baireuth festival will draw crowds to this section of Bavaria.

Much furniture is brought here from Berlin and other northern German towns. Considerable furniture is also imported from England, France, and Italy, especially parlor furniture, in which the styles do not differ so radically. Undoubtedly, a beginning has already been made in exporting such goods from the United States, but it will pay to send competent men to look over the field for the combined trade, before or after its annual exhibition in New York.

Makers of dining-room furniture can not hope to succeed unless prepared to exhibit for some time, as the German style of sideboards and extension tables is altogether different, and the general way of fitting up a dining room is dependent upon the use made of the apartment.

An effort is apparent to push American cylinder desks for office and home use, but Germans prefer the open flat-top desk, and manufacturers are losing golden opportunities while attempting to supply what is not wanted. A study of the desks most in use here will soon make this America's market for office furniture.

One house in Berlin is advertising liberally in the papers of Munich and other South German towns and will be rewarded for its enterprise. It seems hardly necessary to emphasize the fact that Munich is the third largest city in Germany, with nearly 500,000 inhabitants and growing about as fast as any American city. It is so situated as to be an excellent distributing point, and should be promptly looked after for present and future trade. Thousands of families are moving into this city, attracted hither even from the Rhenish and other northern provinces because of the artistic advantages, the excellence of the gymnasiums and the university, as well as by the fact that Munich has the best water supply and sewerage system in Europe.

Makers of brass lamps also have a good field here. American styles would quickly find favor. The best shops do not offer a lamp worth having for style or finish.

Manufacturers exhibiting at Paris should remember that the middle class of Germans, who are the best buyers, do not go in large numbers far from home.

It is well to consider also that a market made here is a market made elsewhere. Consul Monaghan, of Chemnitz, last September

reported an export of rough tables from Germany to the Transvaal amounting in 1897 to 635,140 pounds,* and there can hardly be a question that if our makes of furniture were once well introduced on the Continent, and especially in South Germany, the other markets would soon be ours also.

MUNICH, *December 4, 1899.*

JAMES H. WORMAN,
Consul.

EXPORTS OF GERMAN AND AMERICAN BICYCLES.

Under date of November 29, 1899, Acting Consul J. F. Monaghan, of Chemnitz, reports that the exports of bicycles from Germany during the first nine months of the years 1897, 1898, and 1899 amounted to 8,814,000, 10,554,000, and 10,838,000 marks (\$2,097,732, \$2,511,852, and \$2,579,444), respectively. The principal markets to which the bicycles were exported were Austria, Switzerland, Sweden, Denmark, Russia, Holland, England, Belgium, Norway, Italy, British colonies, and South America.

The German exporters are satisfied with the foreign bicycle trade when they see that the exports from the United States decreased from \$5,473,000 for the first eight months of 1898 to \$3,951,000 in the first eight months of 1899. This market, the Germans say, we ourselves have destroyed. In 1897 and the first months of 1898, a great many cheap wheels were put upon the foreign markets, regardless of future business. There were American wheels sold in Germany for 85 marks (\$20.23) that were dangerous to ride. They looked well, but that was all. I was told that a firm named Bach & Co., in Buchholz, Saxony, sold in one year 10,000 wheels at any price between 85 and 175 marks (\$20.23 and \$41.65). The wheels were known as the "Klondyke." It was said that these wheels came from Chicago. It is also claimed that they did more to injure the importation of good American wheels than anything else. Last year, Germany was a strong competitor of England in the latter's home and colonial markets. In the first nine months Germany sent to England 11,762 bicycles; to Australia, 2,880; and to British East Indies, 1,452. To meet this competition, the manufacturers of England combined to reduce the price of their wheels. Germans fear that next spring will see large shipments of American wheels to this market.

This market is still open to a large trade in American wheels if certain requirements are complied with: the best possible wheels for

*See CONSULAR REPORTS No. 230 (November, 1899), p. 490.

the least possible price—not to exceed 250 marks (\$59.50) at retail; all broken parts to be replaced in the city in which the machine may be purchased; any tire will answer, but the valves must be like those in vogue here; the law requires a good brake on each wheel, and no wheel should be sent here without one.

MANCHESTER EXPORTS TO THE UNITED STATES.

I give below tables of the exports of cotton yarn and cotton velvets, cords, and fustians from this district to the United States for the years 1898 and 1899, the shipments being recorded monthly, which I hope will be of interest to our large manufacturers and merchants.

Exports of cotton yarn to the United States during the years 1898 and 1899.

Month.	1898.	1899.
	<i>Pounds.</i>	<i>Pounds.</i>
January.....	123,702	152,225
February.....	172,721½	160,889½
March.....	230,461½	202,893
April.....	183,536½	129,914½
May.....	154,089	186,893½
June.....	81,675½	206,479
July.....	116,230½	196,253
August.....	118,148	179,973½
September.....	129,857½	209,139
October.....	103,234	250,300½
November.....	132,240	244,305
December.....	149,186½	370,139½
Total.....	1,695,083½	2,489,414½

Cotton velvets, cords, and fustians exported to the United States during the years 1898 and 1899.

Month.	1898.	1899.
	<i>Yards.</i>	<i>Yards.</i>
January.....	512,617½	834,796½
February.....	550,280½	575,910½
March.....	574,088½	1,053,861½
April.....	739,576½	1,107,923
May.....	551,508	1,570,520½
June.....	491,419	1,535,170½
July.....	765,292½	1,066,555½
August.....	748,943½	1,326,544½
September.....	955,507½	1,029,880½
October.....	703,294	1,094,116½
November.....	805,481½	852,601½
December.....	750,025	989,632½
Total.....	8,148,043	13,037,512½

Exports of velvets to the United States.

Month.	Gray vel- vets.	Dyed.
	<i>Yards.</i>	<i>Yards.</i>
October, 1899.....	621,766	472,350 $\frac{1}{2}$
November, 1899.....	391,206	461,395 $\frac{1}{2}$
December, 1899.....	501,878	487,754 $\frac{1}{2}$
Total.....	1,514,850	1,421,500

WILLIAM F. GRINNELL,
Consul.

MANCHESTER, *January 6, 1900.*

GERMAN TEXTILE FACTORIES IN THE UNITED STATES.

Many of the textile manufacturers of Saxony have at last come to the conclusion that it is impossible to sell their products in the United States under the present tariff law, and, rather than lose the American market, several firms are about to establish factories in the United States.

Mr. Edward Stöhr, the manager and director of the Kamm-garnspinnerei, Stöhr & Co., of Leipzig-Plagwitz, was the first textile manufacturer to anticipate the high duty which the United States would put upon all importations of textiles, in order to build up its own manufactures. Mr. Stöhr, with the assistance of a number of German capitalists, organized and built the Botany Worsted Mills, at Passaic, N. J., about fifteen years ago. This textile factory is to-day one of the largest and best paying in the United States. Many German manufacturers have been watching the progress of the Botany Worsted Mills with a great deal of interest, and, now that its success is no longer doubtful, other firms have decided to establish factories. Two noticeable examples are H. Bruhns Söhne and Ernst Fr. Weissflog, of Gera, Reuss. The former will establish a factory in Pennsylvania and the latter in New Jersey.

There are a number of textile firms in this country which, it seems to me, could be induced to establish branch factories in the United States, provided they are given the support and encouragement required.

BRAINARD H. WARNER, Jr.,
Consul.

LEIPZIG, *December 13, 1899.*

FIREPROOF MATERIAL IN GERMANY.

A new industry has lately been introduced into this city which deserves creditable mention and promises to be a great commercial success.

The business pertains to the treatment of cottons, linens, woollen goods, etc., or any article of fibrous or textile nature, by a chemical process which renders such articles fireproof.

When we consider the amount of property which has been destroyed by fire and the thousands of lives that have been lost in the flames, we can readily imagine the great benefits and advantages that come from such a discovery. Many a hotel would not have been destroyed if the lace curtains had not caught fire, and many a home would still be standing had the carpets been fireproof. The terrible holocaust at the charity bazaar in Paris a few years ago could not have occurred had the curtains, buntings, and decorations generally been made of fireproof goods; and it is even possible that many of the unfortunate victims would have escaped unhurt had their clothing been fireproof.

As is well known, the substance usually employed for the manufacture of fireproof clothing, paper, theater curtains, etc., is asbestos, a mineral silicate, a variety of hornblende, which can be woven or otherwise prepared, and is infusible at ordinary temperatures; hence soiled articles made of asbestos need only be thrown into a fire to be cleaned. Asbestos has, however, several great disadvantages, viz, its high price and its great weight, the specific gravity being about 3.

In this new method, the goods that are to be rendered fireproof are treated chemically by a very quick process, which does not act on the fiber; so the goods lose nothing in strength, nor does the treatment in any way affect the color or perceptibly increase the weight, and the advance in the price of the article is very little.

I procured some samples and tried a few experiments with cloth which had been made fireproof by this new process, and found that no flame or fire is produced, as was the case with similar goods which had not been so treated. Only where the candle flame came into direct contact with the cloth was the fiber charred; but there was no spread of fire, and as soon as the flame was removed the charring ceased. I poured some kerosene oil on a piece of the cloth and ignited it; the oil burned vigorously, but the cloth was simply charred where it had been soaked with oil, and there was no spread of fire. A piece of wood wrapped in thick fireproof canvas was

placed for a few moments on the red-hot anthracite coals of a furnace, and when examined was found to be uninjured, except where it had been in direct contact with the coal.

It would seem from these experiments that such a fireproof article would be very serviceable for the storing or packing of explosives. There appears to be no reason why the wood used for building purposes can not be impregnated and rendered fireproof.

There is one disadvantage connected with this discovery which prevents the use of these fireproof articles for outdoor purposes, viz, that water can dissolve the chemicals, and then the substance is no longer fireproof; but as such material can be washed and then reimpregnated very easily and cheaply, and so again rendered incombustible, it would seem that this does not greatly depreciate its value. Steam and moisture do not affect the fireproof qualities, nor does the application of heat; it is also claimed that the manufactured article is not in the least poisonous.

I have learned that the increase in price to the consumer of the fireproof article need not be more than about 15 pfennigs per square meter, or about 3 cents per square yard, over that of the unimpregnated, and in large quantities the difference would be even less; and the difference in weight is such that a piece of flag material weighing before treatment 130 grams per square meter would weigh after impregnation from 140 to 150 grams, which means only from 10 to 20 grams per square meter more. If we consider 500 grams to the pound and $1\frac{1}{4}$ square yards to the square meter, this would mean an increase in weight of only 1 pound for about every 50 square yards of material. For other goods, the average increase might be even less.

Although this fireproof industry is new here, the firm has been in existence for several years as manufacturers of waterproof articles, such as horse blankets, tenting, etc., and has been experimenting in the fireproof line of work for a long time.

E. THEOPHILUS LIEFELD,

FREIBURG, *January 4, 1900.*

Consul.

METAL-PAPER TRUST IN BAVARIA.

Under date of December 9, 1899, Consul Worman, of Munich, transmits the following information concerning the formation of a metal-paper trust in Bavaria:

With the cooperation of the Bavarian Bank of Commerce (Bayerische Handelsbank), the entire industry in metal paper in Bavaria has just been formed into what in the United States would be desig-

nated as a trust, but which is here called a limited stock company, and embraces in its organization the following firms: The metal-paper factories of George Hänle, Munich; Ernst Scholl, Nuremberg; Lindner and Voit, Nuremberg; Jacob Heinrich, Fürth; the bronze-color factory of Leo Hänle; the metal-forging factories (Metallhammer Werke) of Leo Hänle and Jacob Heinrich—united under the corporate name of Metal-Paper, Bronze-Color, and Leaf-Metal Manufactory, formerly Hänle, etc.

By the union of these establishments, the largest company in the metal-paper branch in the world has been created, and, as this gigantic industrial organization has its headquarters in Munich and is distinctly Bavarian, I hasten to report it.

The paid-up capital stock is said to amount to 1,725,000 marks (\$410,550).

The board of directors is presided over by Mr. George Manz, director of the Bayerische Handelsbank; the vice-president is Mr. Emil Brandt, formerly of the firm of Ernst Scholl, in Nuremberg; and the attorney of the company is Dr. Friedrich Rosenthal, of Munich. The management of the company is intrusted to Commercial Counselor Friedrich Hänle as chief, Mr. Julius Lindner as deputy for Munich, to Mr. Heinrich Voit as chief for Nuremberg, and Mr. Jacob Heinrich as chief for Fürth.

METRIC CLASSIFICATION OF GERMAN IRON MANUFACTURES.

Under date of December 12, 1899, Consul Hill, of Amsterdam, transmits copy of a report made by Mr. W. C. Robinson, British consul at that city, to the Wolverhampton Chamber of Commerce on the commercial value of the metric system, and the loss, present and prospective, of British trade on account of the nonadoption of that system. The British consul, to give pointed illustration to his report, gives as the text of his paper the classification of German iron manufactures.

Consul Hill says that the report and advice of the British consul, a man who has been connected with large business enterprises in Germany and the Netherlands, are worthy of serious consideration by the commercial bodies of the United States.

THE BRITISH CONSUL'S REPORT.

The iron and steel manufacturers' unions of Germany have adopted a uniform system of dimensions for articles of universal consumption at home and abroad.

Take, for instance, the enormous production of angle iron of all descriptions. These are rolled by all manufacturers in the Zollverein in identical dimensions,

called "Deutsche normal profile" (German normal profiles), and each section is designated by a number in the following manner: "1 N. P. 20," which gives the complete specification of a section. With these specifications and price lists, printed tables are furnished which give all necessary technical information as regards the weight of each section, the load which it can carry, the sizes of the connecting rivets, etc.

Dealers both at home and abroad keep the sections most in demand in stock, and the universality, identity, and completeness of the normal sections are naturally of the greatest value to buyers and builders.

A further instance may be given in the manufacture of flanged boiler ends or fronts for Cornish or Lancashire boilers, with or without furnace holes. These boiler fronts are made in sizes up to 3 meters (9.843 feet) in diameter by all the different iron and steel works in the Zollverein in the same standard sizes, rising by 10 centimeters (3.75 inches) for each size required. As all the boilers are now constructed in standard sizes, there is a great convenience for buyers in every part of the country, who are thus enabled to procure at once the exact size they require.

As a further instance, iron and steel tubes and all fittings connected with them, such as valves, cocks, and T pieces, are made, so far as flange diameter and working lengths are concerned, in normal, standard sizes, in order that every part of one work may be procured at once to fit every corresponding part of another construction. These normal standards are all fixed by the free cooperation of the combined German engineers' unions and are unanimously adopted by the various manufacturers all over Germany.

At present a committee of the engineers' unions is occupied in endeavoring to fix a metric thread for bolts and screws, nuts, bolt heads, etc., as the present universal normal standard (the Whitworth) is so differently constructed by different works that the parts are not as interchangeable as should be the case.

These classifications are naturally making more and more progress in Germany, not in the iron trade alone, but in other manufactures. I am quite aware that the same system exists to an extent in Great Britain, and also that some large works there have adopted the metric system. But I wish to lay stress upon what appears to me to be the case, that in Germany there is a much more systematic procedure in this respect, and, above all, that Germany and the Continent generally will have a constantly increasing advantage over British manufacturers in the future in foreign countries, unless the metric system be fully and entirely adopted by Great Britain. I may instance as an undoubted fact that the preference which Germany has obtained here over Great Britain as regards railway bridges and other railway material is mainly owing to the existence of this metric classification. And as regards pipes and tubes for waterworks, it is absolutely certain that the Dutch market is completely lost to Great Britain, so far as any new constructions are concerned, from the same cause. Existing waterworks which had adopted English iron in the commencement may still send orders to England. Perhaps, no stronger instance in favor of the metric system of classification can be given than the fact that a Belgian firm of repute, which lately obtained a large contract for water piping in this country, was obliged to guarantee that the German system of normal classification should be adopted in the manufacture of the pipes and tubing.

It appears to me evident that where competition with countries enjoying the advantage of the metric system becomes, as it is daily becoming, more and more severe, those countries which already hold that advantage must eventually obtain the priority, unless the competitor adopts the same principle. If I am correctly informed, a combination of Belgian iron manufacturers has already started works in China where probably the Belgian systems, and therefore the metric system, will be introduced.

GERMAN TRADE WITH JAPAN AND CHINA.

Consul-General Mason sends from Berlin, November 21, 1899, the following translation from the *Vossische-Zeitung*:

We have already called attention to the fact that imports from Asia into Germany have decreased to a considerable extent. Exports to Asia, on the other hand, have fortunately increased. The following figures give the amount of exports and imports from Germany to Asia for the last three years and for some of the former years:

Year.	Imports.	Exports.
1898	\$80,661,968	\$40,480,706
1897	83,807,178	32,886,840
1896	72,229,906	35,295,876
1890	39,305,700	22,001,550
1880	15,711,332	5,215,532

One sees from these figures how the trade with Asia has increased in importance. Imports from that continent have doubled in eight years and are five times as large as they were eighteen years ago. Exports to Asia have increased almost 90 per cent in ten years and are eight times as great as in 1880.

In the increase in the trade with Asia, the Asiatic States of Japan and China play a leading rôle. Japan acquired a general importance for German trade only about ten years ago. In the year 1883, the total import from Japan was less than \$25,000; in 1887, it was \$200,000; it doubled in the year 1888, and in 1889 doubled again; in 1892 it was nearly \$2,000,000. Then after a period of several years, during which imports from Japan did not increase, they rose in 1896 to almost \$3,000,000. In 1897 they exceeded \$3,000,000; the next year (1898) a decrease of almost \$500,000 took place, which was very evenly divided among the principal articles of commerce. Exports to Japan varied in the years 1880 to 1888 between \$375,000 and \$1,300,000, then rose suddenly in 1889 to \$4,500,000, and remained with some slight variations until 1894 at this amount, when they gained \$2,250,000 two years successively; from 1896 to 1897 and from 1897 to 1898 they increased each year about \$750,000. When one compares the year 1898 with 1888, the import has increased more than six times its original value and the export has more than doubled. The trade with Japan was as follows during the years given:

Imports from Japan.

Articles.	1898.	1897.	1896.	1895.	1887.
Total imports.....	\$2,753,542	\$2,892,414	\$2,718,436	\$2,854,496	\$193,970
Gold coin.....	38,080	129,948	553,588	.....	.....
Straw goods.....	143,514	100,638	96,866	11,852	3,808
Copper (raw).....	547,828	619,276	417,880	400,078	.....
Gallnuts.....	29,274	39,746	104,720	30,364	.....
Camphor.....	181,118	289,170	200,052	107,388	.....
Fish and seal blubber.....	266,084	182,784	211,820	230,860	.....
Silk goods.....	184,512	99,070	28,936	28,798	.....

Exports to Japan.

Articles.	1898.	1897.	1896.	1895.	1887.
Total exports.....	\$10,233,048	\$9,486,204	\$8,475,656	\$6,206,326	\$1,520,534
Coal-tar dyes.....	521,172	450,102	481,892	446,888	61,642
Iron and iron goods.....	1,004,598	1,397,548	1,422,526	1,297,214	577,388
Machinery	1,190,476	633,552	291,312	168,504	18,326
Explosives	130,662	65,212	20,944	25,466	.....
Alcoholic liquors.....	565,346	365,806	97,580	15,708	714,000
Sugar	1,656,004	1,482,740	892,500	535,984	.....
Paper	853,944	539,784	403,172	226,334	20,230
Woolen yarn.....	348,670	781,592	675,682	557,206	9,520
Woolen goods.....	1,382,304	1,361,836	2,246,482	1,220,464	184,926
Cotton goods.....	175,644	81,872	45,696	33,796	49,266

According to these figures, only silk goods and seal blubber show a material increase among the imports from Japan, while the gold import has almost entirely disappeared. All the principal articles of commerce, with the exception of iron and woolen yarn, share in the increase in the exports to Japan. The export of machinery has especially increased. It is not yet possible to ascertain what the export trade will be in 1899, but it is probable there will be a decided decrease. The export of iron and machinery in the first nine months of the year has not reached that of the preceding year. The export of woolen goods has also been small, and the sugar export is less than one-third of that of the preceding year. Imports from Japan, however, show a general increase in 1899 over the preceding year.

Germany's trade with China has developed much more recently than that with Japan. The import from China was, up to the year 1888, only a little over \$500,000. In 1889, it increased suddenly to almost \$1,400,000. In 1893, it was \$4,000,000, and in 1894 over \$6,000,000. After standing still a year, it jumped in 1896 to more than \$10,000,000 and in 1897 to \$14,000,000, only to decrease in 1898 by \$4,500,000, which shrinkage was, however, mainly caused by the falling off in the gold import. The export to China rose from 1880 to 1885 from \$1,750,000 to over \$4,000,000, then sank again somewhat, but rose between 1886 to 1889 from \$4,000,000 to \$6,000,000. It varied then until 1895 between \$6,000,000 and \$9,750,000, and rose in 1896, mainly owing to the need of munitions of war, to over \$11,000,000. In 1897, a decrease occurred of over \$3,000,000 in the export trade; but in 1898, an increase of nearly \$4,000,000 took place. The following tables give further particulars relative to this trade:

Imports from China.

Articles.	1898.	1897.	1896.	1895.	1887.
Total imports.....	\$9,404,094	\$13,730,789	\$9,936,258	\$6,334,092	\$431,256
Gallnuts	489,328	324,156	342,482	324,879	41,412
Camphor.....	255,374	295,126	386,988	277,936	238
Gold (raw).....	3,997,924	6,897,910	5,034,652	2,032,758	.....
Bed feathers.....	673,540	670,062	581,434	527,646	236,334
Bristles	466,670	2,513,042	735,182	584,766	1,666
Hides	581,434	414,596	348,194	209,202	.....
Raw silk.....	265,228	63,646	124,474	139,468	36,414
Tea	705,670	628,320	636,954	709,002	9,282
Straw goods.....	249,662	280,126	257,516	340,340	476

Exports to China.

Articles.	1898.	1897.	1896.	1895.	1887.
Total exports.....	\$11,426,380	\$7,714,294	\$10,776,878	\$8,428,056	\$3,406,018
Coal-tar dyes.....	1,285,438	1,253,070	1,845,690	1,386,588	1,083,614
Iron manufactures.....	1,551,046	1,834,266	3,770,634	1,785,476	658,784
Copper and manufactures....	981,370	825,246	862,036	1,185,002	46,886
Woolen goods.....	1,138,730	1,272,110	1,698,844	1,341,130	326,774
Machinery (iron ships included).....	3,657,346	213,724	105,434	27,370	238
Beer	256,088	198,730	131,614	58,310	2,618

According to these figures, it is only gold and bristles whose import has decidedly decreased. All the principal articles participate in the increase of goods exported, with the exception of iron manufactures and woolen goods. The lion's share is taken by the export of machinery, because the three iron steamers which are placed under this head alone represent a value of \$3,500,000, whereas in 1897 only one ship, having a value of about \$110,000, was sent to China. Without these three ships, the export to China would only have been a little more in 1898 than in 1897. As this year it appears that no ships have been built for China, there must be a considerable increase in other exports or there will be a decrease in the total. There is, however, little prospect that the difference will be made up; for, with the exception of coal-tar dyes, all the principal articles of commerce show a decrease in the first nine months of this year. The import from China is also less, excepting in bed feathers, bristles, and silk. The heaviest fall is in hides and tea.

Although our trade with eastern Asia has increased in a most unforeseen manner during the last ten years, the results of the years 1898 and 1899 are not particularly brilliant. It will take great effort on our part to keep our trade with Japan and China at the height which it has already reached.

GERMAN SAMPLE ROOMS IN SYDNEY.

The German manufacturers have come to the conclusion that if they would continue to make progress in the future as they have done in the last twenty years in their export trade, they can no longer depend on the sample and display rooms in Berlin, Frankfort, Leipzig, Hamburg, and other large cities of the Empire. They begin to feel the inroads which other nations are making in the German foreign markets. They believe—and here belief is based on practical knowledge—they must, to hold their trade, transplant their sample and display rooms from German cities to the countries in which they intend to do business.

The manufacturers of the Grand Duchy of Weimar, with the Grand Duke at their head, have taken up this question and are about to establish a sample room in Sydney, New South Wales. It is claimed by the men at the head of the movement that it is impossible for any one concern to carry on this undertaking alone; that different industries must combine and make the burden as light as possible.

The Bavarian commercial and industrial chambers have made a close study of this enterprise and the opportunities offered in the Australian market, and have come to the conclusion that the best way to develop their industries is to join the Weimar manufacturers.

The exporters have found by close study that the principal wants of Australia are all kinds of machines, lamps, brushes, gloves, shoes, glassware (including optical goods), photographic supplies, musical instruments of all kinds, paints and oils, candles, agricultural machines and instruments, furniture of all kinds, and beers.

This is an opportunity that American manufacturers should not neglect. There is hardly an article named in the foregoing list that we can not make as well as, if not better than, the Germans. There is no question but that in time we will force our way into that market, but it will be hard work after the Germans have gained possession, and we should try to get in first.

J. F. MONAGHAN,
Acting Consul.

CHEMNITZ, *December 7, 1899.*

AUSTRALIAN WOOL SALES.

Under date of Melbourne, November 20, 1899, Consul-General Bray transmits a clipping from the Melbourne Argus of November 10, 1899, giving an account of a wool sale at Geelong. Many American buyers were represented at this sale and purchased largely. Up to the date of the consul's writing, 10,916 bales had been shipped to the United States and it was anticipated that the total shipments for the season would aggregate 20,000 bales, or more than double those of last season.

GEELONG WOOL SALES.

To-day's sale at Geelong was a record one in more than one respect. True, the quantity offered—13,047 bales—is not the largest ever offered in Geelong at one day's sale, this being exceeded on November 13, 1896, when 14,407 bales were offered and 13,711 bales were sold. But the average prices are the highest known for a quarter of a century, and the top prices for greasy fleece, both merino and crossbred, as well as for several other descriptions, are the highest recorded within the same period.

Curiously enough, in a season when merino wools are so intensely sought after, and on a day with a magnificent display of merino wool, the record price for greasy fleece wool is now held, not by merino, but by crossbred, which to-day sold up to 18¼d. (37 cents).

As to merinos, the selection was also a magnificent one; not that the best to-day are better than we have seen them before, though they are certainly up to the very highest standard. But what is so conspicuous to-day is the high general level of excellence of almost every standard western district clip of merino, as well as fine crossbred. The striking feature of to-day's sale is the happy combination of what is probably the best clip Victoria has ever produced and the highest price level

since 1873. It is this combination which is responsible for the fact—well worthy of record—that one firm, Messrs. Dennys, Lascelles, Austin & Co., sold to-day no fewer than 2,208 bales of greasy wool at or over 15d. (30.4 cents) per pound.

Continuing the subject of records—one which has a peculiar fascination for growers in a stirring time like this—the top price for greasy merino fleece has been raised from the 17¼d. (35 cents) of last week to 17¾d. (36 cents) to-day, which was obtained for Mount Fyans, Mount Stone, Nerrin, Staughtonvale, Gnarpurt.

The record for greasy crossbred, previously 17d. (34.4 cents), paid in Melbourne, was to-day raised to 18¼d. (37 cents) for DMcD over Middle Creek. For greasy merino pieces it was raised from 15½d. (31.4 cents) last week to 16¼d. (33 cents) to-day for Terrinallum.

For greasy crossbred pieces it now stands at 15½d. (31.4 cents) for FFA (Turk-eith), for crossbred bellies 11¾d. (23.5 cents) for Barwon-park, for crossbred locks, 5¼d. (10.5 cents) for Gums, for merino bellies at 12¾d. (25.8 cents) for Terrinallum, and for merino locks at 6¾d. (13.6 cents) for Terrinallum and Gnarpurt. The previous record for greasy merino lambs, 21½d. (43.3 cents), has not yet been exceeded, and for greasy crossbred lambs the highest price is 14d. (28.5 cents), for the Golf Hill, sold privately.

As to the market, competition was again wonderfully keen, and for merino and fine crossbreds a further advance of about 0¼d. must be recorded. The very deepest crossbreds and Lincolns, however, hardly maintained their rise of last week.

The disparity between the prices of the fine and the coarse crossbreds has probably never been greater. Here we have comebacks, that is, ¾-merino and ¼-Lincoln, selling up to 18d. (36.5 cents), while the coarsest crossbreds sell from 7d. (14 cents) downwards.

Out of 13,047 bales offered, 12,675 bales were sold. This makes the total number of bales offered in Melbourne and Geelong this week 28,860 bales, and the total number sold 28,222 bales, against 38,673 bales offered and 35,812 bales sold the second week in November last year. This falling off is, however, largely to be accounted for by the fact that this year the Melbourne Cup holiday was in the second week of November, whereas it fell in the first week in November last year. The following shows the quantity of wool offered and sold up to date, compared with previous years:

Victorian wool sales.

From opening of season to—	Offered.	Sold.
	<i>Bales.</i>	<i>Bales.</i>
Friday, November 10, 1899.....	119,891	113,163
Friday, November 11, 1898.....	113,505	105,710
Friday, November 12, 1897.....	94,546	83,934
Thursday, November 12, 1896.....	109,066	102,550

NEW BALLAST REGULATIONS AT NEWCASTLE, NEW SOUTH WALES.

Under date of November 15, 1899, Consul Goding, of Newcastle, reports:

The burdensome ballast regulations at this port have been revised, greatly to the advantage of vessels arriving at this place. I inclose a copy of "ballast regulations" at this port. We have been

laboring incessantly for the past year to accomplish this change, and now that it is accomplished the expense to American vessels here is much less than formerly.

NEWCASTLE BALLAST REGULATIONS.

(1) The port health officer will inspect ballast to ascertain its state, and will exercise discretion in dealing with it under the subjoined rules.

(2) All foul or offensive ballast whencesoever arriving must be discharged at sea; or, if within the harbor, then below low-water mark.

(3) All clean stone and shingle ballast whencesoever arriving may be disposed of at the master's discretion, subject to port regulations.

(4) Clean gravel, sand, earth, or loam ballast arriving from ports not indicated in the next succeeding paragraph may be used in harbor works or discharged at the ballast jetty.

(5) Gravel, sand, earth, or loam ballast taken at ports or places which (a) are malarious, (b) have been the seat of epidemics of yellow fever, (c) are the permanent seat of cholera, or (d) were the seat of cholera, yellow fever, or plague at the date such ballast was taken must be discharged at sea, or, if within the harbor, then below low-water mark.

(6) On special report by the port health officer, accompanied with a written application by the master, the board may direct conditional pratique to be given to vessels from which ballast has not been discharged, on condition that a sufficient guaranty is given by the master, owner, or agent that the ballast shall not be disturbed until the vessel has sailed out of New South Wales waters.

SYDNEY, *October 25, 1899.*

CONDITIONS AT CHEFOO.

Consul Fowler writes from Chefoo, November 29, 1899:

I inclose copy of a letter from the Rev. Dr. Hunter Corbett, depicting the deplorable condition of affairs in the country near here. The region described does not include the area covered by the floods last year, but that country is also in a very bad way. My object in sending this letter is to show our grain exporters that there is a good market here for their corn. I have never seen "mixed flour," but am told it is cheaper than flour. It would seem that Shantung also offers an excellent opening for that trade.

CHEFOO, *November 15, 1899:*

DEAR MR. FOWLER: During the past two months I have traveled in twelve different counties, and found the price of food of every kind higher than I have known for more than thirty years.

The great scarcity and high prices are due to several causes. From August, 1898, till June, 1899, a period of nine or ten months, little or no rain fell; consequently, the wheat crop was almost an entire failure in many places. In July and August a great army of caterpillars in many places devoured the summer crops. Later, a hail storm passed over a large section of country and did immense dam-

age. During July and August of this year, less than half the usual quantity of rain fell, and since then in many districts there has been no rain whatever; consequently, the farmers have been unable to plow the fields and sow the usual winter wheat.

I found the greatest distress in the counties of Wëntung, Hai Yang, Chimei, and Iheo Cheo, along the eastern sea, and the same distress is said to prevail in Chuching, Kin Cheo, and farther south. I saw hundreds of men, women, and children fleeing from these districts, trying to reach Manchuria, or other more favored places, before the severe winter weather comes on, as the only hope of escaping starvation. Many were already emaciated for want of nourishing food. I found people gathering the leaves of the willow, locust, and other trees—also of the potato vine—and roots on the hills and mountains to use for food.

I have never heard of so much sickness and so many deaths. When fever, dysentery, and other diseases overtake the half-starved people, there seems to be but little hope of recovery. Many who in ordinary years have sufficient say they can manage to live only to the end of the year, and after that, unless help comes, they must die.

Many are trying to sell their land, houses, etc., but find no buyers at any price.

Very truly,

HUNTER CORBETT.

PACKING SUGAR IN JAVA.

I wish to call attention to the fact that a new problem, and so far an unsolved one, is appearing in connection with the sugar trade of this colony. It is of special interest to Americans, as in the last two seasons at least seven-tenths of the sugar crop of Java went to the United States. It is the question of packing sugar.

At present, sugar is packed in cases made of matted bamboo straw, and it has been found to be the ideal packing, far superior to the grass mats used for Philippine sugar. Unfortunately, owing to improvident methods and neglect of government supervision, the bamboo is showing signs of giving out, and experts predict that the time is not far distant when it will be so scarce as to become too expensive to use in packing sugar, in view of the present small margin in the profits of sugar planting.

In some districts, there have been government officials who had foresight enough to compel the natives to plant a new tree as soon as the old one was cut down; but unfortunately such cases were few and far between, with the result that many districts of Java are now almost entirely denuded of bamboo.

Consequently, the planters are casting round for a material to take the place of bamboo matting. So far nothing has been found that will answer. Jute is unsuitable.

A gentleman here who is largely interested in sugar plantations, with whom I was talking the other day, told me that anyone who

could invent something satisfactory would make a fortune in Java alone, as his method would be at once used by every planter. Inasmuch as the sugar exports for last year were 689,542 metric tons, it can readily be seen that it may be worth someone's while to try.

Let an inventor acquainted with sugar and its properties set his brains to work to see if he can not evolve something that will meet the situation I have described. Let him, however, bear in mind that what might be suitable packing for Cuban sugar would not necessarily do for Java, as this sugar has a much longer sea voyage to undergo, and must be much more carefully protected.

I shall be very glad to answer any inquiries on the subject.

SIDNEY B. EVERETT,

BATAVIA, *November 14, 1899.*

Consul.

PUBLIC IMPROVEMENTS IN SIAM.

ELECTRIC LIGHT.

There is an 8,000-light (incandescent) central station in Bangkok which was purchased in 1890 from the English Brush Company by a Siamese company for the purpose of lighting the King's palace and for the use of the public. The plant was not operated until 1894, as the company met with financial difficulties, and finally it was turned over to Mr. L. E. Bennett, an American engineer, under a twenty-year exclusive franchise to furnish light for the Government and the public. Since that time it has been operated fairly well by an American syndicate.

This plant, which is at present valued at \$200,000 in United States currency, has recently been sold to a Danish company called the Siam Electricity Company, Limited, and will be extended and improved. Most of the supplies for these works have been purchased in Europe, but very recently several orders have been placed in America.

STREETS IN BANGKOK.

Thirty-five years ago, there were no streets in Bangkok. All traffic was carried on by boats, and the numerous canals still compete with the street traffic. As late as ten years ago there were no more than 9 miles of paved streets in the whole city. To-day there are over 47 miles, and many new streets are being opened up each year, on which the old iron and wooden bridges are being replaced by modern steel bridges. The King himself builds one steel bridge each year out of his private funds as a gift to the city, and this is opened to the public with some ceremony on his birthday. The Government imports from England every year considerable quantities of bridge materials.

Seventy-five miles of canals traverse the city of Bangkok, a large percentage of which has been added in recent years. The tendency, however, is to make streets instead.

PROVINCIAL CANALS AND IRRIGATION.

Outside of the city and extending all over the vast alluvial plain of southern Siam are a great number of canals, hundreds of miles in extent, which serve as the highways of the country. These canals have all been dug within the last fifty years, and up to ten years ago were the only means of communication, except by-paths through the jungle. They serve to connect the three great tidal rivers which flow in somewhat parallel courses to the sea; but, as a result of the action of the tides, they are rapidly silting up and becoming useless.

Ten years ago the Siam Canal, Land, and Irrigation Company was formed through the encouragement of the King. This company received large concessions of land and had for its purpose to dig canals for irrigation, as well as highways, and to convert large tracts of lowland into paddy or rice fields. The company is now opening up two large blocks of land. On the left side of the Menam, a canal 16 meters ($52\frac{1}{2}$ feet) wide and 35 miles long connects the two rivers Menam Chow Phya and Menam Nachon Nayok. Several miles south of this canal and running parallel to it is another main canal, and about the same distance north and running in the same direction is a third, 12 meters (39 feet) wide. These three main canals furnish the chief water supply of this system. At intervals of $1\frac{1}{2}$ miles branch canals are to be cut at right angles to the main channels. About half of this work has been completed, and a tract of waste land 25 by 35 miles in extent is being brought under cultivation. Ten years ago this was swamp and jungle, inhabited only by the elephant and other wild beasts. To-day it is occupied by over 70,000 people, and its product furnishes one of the richest revenues of the country.

On the opposite bank of the Menam is another canal system, between the Menam Chow Phya and the Menam Nachon Chaisee. The work on the main canal is fairly well begun.

At present, the work is delayed on account of some questions relating to the concessions. When these difficulties are settled, as they are expected to be in the near future, the company, which has now only four machines—one dredge and three excavators—at work, will immediately increase its force and finish the task in four or five years.

According to the agreements by which the concessions were granted, the company derives its revenue from the sale of lands bordering on the canals which are opened. The lands are to be sold at

not more than about \$2.75 gold per acre, a percentage of which is to be paid in advance when the work upon the canal is begun. So popular has this plan proved that all the land in the first block on the left side of the Menam is already taken up, and the people are impatiently waiting for the completion of the work; while in the second block, which does not promise at present to be completed for several years, more than half the ground has already been applied for.

A second source of revenue for the company is the toll collected at the several locks, and a third will be the supply of fish which swarm in the waters of the canals.

Encouraged by the success of this company, the King has in mind an extensive canal programme for the development of the rich lands in Siam that now lie waste, and I am told that he has already sent to Holland for expert engineers to make a plan for this comprehensive canal system. There are thousands of miles of such waste lands still uncultivated, and it would seem that there is nothing to which the Government of the country could with more advantage turn its immediate attention, in view of the small amount of capital required, the revenues that must accrue to the treasury, the splendid values that will be added to the country in its increased productive area, and the abundant employment afforded a people who are to-day in need of such encouragement.

The opening up of these rich rice fields is giving a new aspect to the question of agriculture in this country. Besides the thousands who are taking up small holdings, there are also those who are buying large estates to await an increase in values and for the cultivation of rice on an extensive scale. Already the question of better methods and tools for the cultivation of the land is of importance.

The crude wheels run by the human foot, the wooden plow with its iron shoe, the wooden-toothed buffalo rake used for a harrow, the scattering of the seed by hand, the thrashing floor of hardened mud and buffalo dung tramped by buffalo hoofs, and the winnowing of grain by the shovel and the wind must soon give way to the wind-mill pump, the steel plow, the improved harrow, the seed drill, and the thrashing machine. Nothing has been done in these directions, for instruments adapted to the peculiar demands of the soil have not yet been invented. Some enterprising American should certainly be able to make agricultural implements suitable for this country and reap substantial financial benefits therefrom.

HAMILTON KING,
Consul-General.

BANGKOK, *November 18, 1899.*

AMERICAN TRADE IN SYRIA.

Although the imports direct from the United States are yet insignificant, I can at least report progress. A year ago absolutely nothing was being done in this line. There were brought hither some American manufactures from Hamburg and Liverpool, sewing machines forming the bulk of such imports; now the prospects are brighter. Mr. Wehner has sent a sample order for flour—some 300 bags—to ascertain what this market wants in the way of American flour. He expects four grades, has already tested the samples received, and is hopeful that he will be able to introduce this product in large quantities. Philippo Turkel & Co. have sent several orders for our glassware and hardware. This commission house has already introduced American beer, which sells well in Beirut. Mr. Turkel is at present on a tour along the coast, soliciting orders for various American products and manufactures. Najil Letaif forwarded yesterday to New York an order for various kinds of canned provisions, prepared cereals, etc. He is also interesting himself in American oil and gas stoves.

The firm of Fred Wehner will make a strong effort to introduce our cotton goods into the Levant, these being now unknown outside of Alexandretta and Smyrna.

Maurice Grünberg is again considering the question of importing American petroleum. The Russian oil now sells here at 40 piasters (\$1.40) per case, having gone up in price 14 piasters (49 cents) per case during my eighteen months' stay in Syria. No American oil is sold here now, while as late as 1884 Beirut imported this article to the value of from \$200,000 to \$300,000 per annum. American oil has an excellent reputation in Syria, and it could be sold here at higher figures than those for which the Russian oil sells.

By persistent efforts on the part of American manufacturers, trade is both possible and practicable, and the general market is worth fighting for, especially if we can introduce our cotton goods.

As to transportation, freight, etc., efforts are being made to induce Barber & Co., of New York, to establish a regular service between that port and Alexandretta on the Syrian coast, as they have already done between New York, Smyrna, and Constantinople. Even under present conditions, I believe that goods bound for Syria can be shipped most quickly and cheaply by the Barber & Co. Levant line.

I am, at present, giving special attention to the question of opening wells and introducing pumps and windmills into this semiarid land. An experiment will be made on the farm of Mr. Constantine

Khourî, in the outskirts of Beirut. He is paying \$60 a year for 2 meters of water per day, and yet the supply is entirely insufficient. If this kind of irrigation proves a success, it will be a great boon to this country and make Syria a good market for American pumps and windmills.

GABRIEL BIE RAVNDAL,
Consul.

BEIRUT, *November 8, 1899.*

WINDMILLS IN SYRIA.

Under date of Beirut, December 7, 1899, Consul Ravndal writes to an Indiana firm:*

What is needed here is a windmill for irrigation purposes—an outfit which will furnish a supply of water from wells averaging 50 to 60 feet in depth, sufficient to irrigate gardens and small farms 10 to 15 acres in extent. Water is obtained from natural springs and open wells. From the latter the water is drawn by horse, ox, or donkey power, in buckets attached to ropes revolving over a large drum directly above the well. One side descends while the other rises, carrying the small buckets with them; those descending are empty, while the ascending ones are full, and, as they pass over the top, they discharge into a trough, which conveys the water to the cistern or into irrigating ditches. The buckets are fastened to the hawsers about 2 feet apart, and the system is fairly effective, being usually applied to wells 12 to 20 feet deep, though it may also be utilized to a depth of 150 feet.

Winds prevail in most parts of the country during all seasons of the year, those from the southwest and north being the strongest and most persistent, at least along the littoral. August and September are the calmest months and also the driest; but even then we have afternoon and night breezes presumably sufficiently competent to operate our easy-going mills.

I know of only two modern windmills in my consular district, both of American manufacture. One is a Wolverine (Chicago), imported by a native residing near Damascus. Mr. Meshaka, our consular agent there, writes me that "it can not be fixed for work before next spring, when it will be possible to tell the effect which it will produce upon the people." The other is a Halladay (Batavia, Ill.), erected on the grounds of the insane asylum, a missionary institution at the foot of Mount Lebanon, 4 or 5 miles out of Beirut. It is used for elevating water from a spring 40 feet into a reservoir, from which the buildings and the garden are supplied. I have several times

* To which the letter has been forwarded.

inspected this windmill, and have taken prominent natives there in order that they might familiarize themselves with wind engines in general. It works beautifully, and a neighbor, owner of a silk factory, ordered a similar one a few days ago.

No American windmill company has an agent here, and windmills for irrigation purposes are entirely unknown. At Sidon and Haifa, there are two or three windmills, some ten years old, which pump water for domestic use. They do not seem to have aroused any particular enthusiasm, as people here are mostly concerned about facilities for irrigating their lands. In my consular district, there are altogether perhaps half a dozen windmills of European origin, but they are generally admitted to be failures. They are clumsy and heavy, and difficult to keep in order. I was told a couple of days ago that near Aleppo there have recently been introduced between twenty and thirty Aermotor windmills (Chicago). Aleppo is in the Alexandretta consular district.

Syria and Palestine, on account of the defective means employed for utilizing the abundant subterranean water supply, are justly called semiarid regions. The introduction of boring and pumping machinery will no doubt prove a great boon to this country. The American missionaries at Sidon own a very expensive drilling machine, and have been at work for two years trying to reach the artesian basin. If they do not succeed at Sidon, they intend to move the machine into the Bekaa plains, between the Lebanon and the Anti-Lebanon, where artesian wells can no doubt be sunk successfully. Other semiarid districts, where agriculture even under present unfavorable conditions is carried on extensively, are the Hauran and Hamath plains. At Sidon, ordinary water was struck, while the above-mentioned experiments were pursued, at a small depth, and there is talk of importing up-to-date windmills to use this supply in irrigating the orange groves.

I believe, also, that wind power could be advantageously employed here to run the very primitive flour mills, wine and olive presses, etc., of this country, now operated by water or horse power. The firm of Sabbag & Son expects to use our pumps and wind engines in its bitumen mines in Palestine, which must be constantly drained to prevent inundation. This firm does an export business to the United States amounting to a round million dollars per annum, chiefly in wool, licorice, and bitumen. This is their first departure in the field of imports.

There are in this country, to my knowledge, two American engineers—one at Sidon and one at Alexandretta—the latter in charge of Mr. Sabbag's licorice-root presses.

Descriptive matter should be mainly in French and English, and

too much can not be sent. Advertising is a novelty here and attracts attention.

As to the customs duty, I have endeavored to persuade the collector to admit windmills without charge under the clause allowing agricultural implements free entrance. I have not as yet received a final answer. The ordinary duty on imports is 8 per cent ad valorem.

GERMANY'S CARRYING TRADE WITH GERMAN EAST AFRICA.

In order to facilitate trade with its East African possessions and the South African Republic, Germany established some years ago an admirable arrangement whereby an exporter from Germany is enabled to ship goods to any of the principal German East African ports with as little trouble as he would have in shipping the same goods from one city to another in the German Empire.

According to this arrangement, the German railways issue through bills of lading at any of the chief railway stations to the principal German East African ports or to the cities of Pretoria or Johannesburg, in the Transvaal, guaranteeing the delivery of the goods in good order and also covering the marine insurance.

The extraordinary advantages of this system are obvious. The services, and thereby the expenses, of all middlemen, especially forwarding agents, with all their extra charges, are entirely done away with; also the trouble and expense of covering marine insurance, usually effected through insurance brokers. In order to accomplish this, the German Government has made arrangements with the German East African Steamship Company, of Hamburg, and for shipments to Pretoria and Johannesburg with the Netherlands South African Railway Company, of Amsterdam.

The extensive trade carried on between the United States and Germany should make a similar arrangement between these two countries of inestimable value. Owing to the fact, however, that the railroad interests of the United States are in the hands of private corporations, the difficulty to combine the interests would doubtless be very great; but they ought not prove insurmountable, because of the enormous benefit that would be derived from such an arrangement.

The following are the general details which govern the shipments to German East African ports:

(1) Goods are shipped by rail to Hamburg, thence by the German East African Steamship Company to East African ports. Goods whose destination is either Pretoria or Johannesburg are carried

from Delagoa Bay (Lourenço Marquez) by the Netherlands South African Railroad Company to their destination.

(2) For the shipment of goods special bills of lading, obtainable at the various railway stations, must be used.

(3) The railways are responsible only for the delivery as far as Hamburg, whereas the steamship company assumes the responsibility for the delivery from Hamburg to place of destination.

(4) Explosives, easily inflammable goods, as well as acids, are excluded from shipment, whereas certain bulky articles of light weight are subject to special freight charges and must have the gross weight and the cubic measure noted on the bill of lading.

(5) All goods must be properly packed for ocean transport.

(6) All goods must be legibly marked with the place of destination in letters at least 2 inches in height.

(7) The dates of departure of the steamers from Hamburg are regularly posted in the freight offices of the various railway stations.

(8) The steamship company must be advised eight days before date of sailing of shipments of 30 tons or over.

(9) The bills of lading must contain full information necessary for calculating freight, insurance, duty, and for statistics.

(10) From the data on the bill of lading issued by the railroad company, the steamship company issues a bill of lading for the transportation by sea, which is sent either to the shipper or, at his request, directly to the consignee.

(11) All charges for freight, marine insurance, etc., must be paid by the shipper at the time of shipment.

(12) The steamship company effects the insurance on the shipment from the railway station from which the goods are shipped to the place of delivery, provided the shipper desires it and makes the necessary entry on the bill of lading. The insurance is effective from the moment the bill of lading is stamped to the signing of the receipt for the goods at the place of delivery. If the goods are not called for within ten days after their arrival, the insurance terminates with the tenth day.

The rate of insurance for manufactured articles is five-eighths of 1 per cent plus a stamp duty of about 5 cents per \$250 insurance. For all other articles, the rate is one-half of 1 per cent with a stamp duty of $2\frac{1}{2}$ cents per \$250.

Freight schedules for every article of export are to be had at every railway station in Germany. They are very comprehensive and simple, and enable an exporter to calculate the freight charges and insurance on a shipment of goods from any point in Germany to any of the German East African ports, or to Pretoria or Johannesburg, in a few minutes.

WALTER SCHUMANN,
Consul.

MAINZ, *December 11, 1899.*

MEAT IN SOUTH AFRICA.

The recent action of the prime ministers of Cape Colony and Natal in suspending the duty on frozen and slaughter meat, the same being 4 cents per pound, has thus far conferred no benefit on consumers, particularly those at a distance from the seaports, and can not unless the duties on "canned meat" are suspended as well. Canned meat is, perhaps, the most important article of export from the United States to this country. The suspension of the duty on frozen meat should help the exporters of the United States; but, I regret to say, the lack of ships with cold-storage space prevents us from capturing any of this great trade. Over 4,000,000 pounds of frozen meat were sent to this country in 1898, not a pound of which came from the United States. The exportation of slaughter stock should be given prompt attention. The consumers not in reach of the refrigerator storage plants (which are at the seaports) obtain no advantage from the cheapening of frozen or chilled meat. There should now be on the water a large supply of slaughter stock. Australian stock is arriving, as well as shipments from the Argentine Republic. Not one head of slaughter stock, or stock on the hoof, out of the several thousand received in 1898 came from the United States.

Frozen meat from Australia is sold cheaper than the meat of the colony, which is rapidly disappearing, even with the old duty of 4 cents per pound in force. The suspension of the duty ought to put the price down to a point that will enable the poorest to supply themselves. The trade, however, prefers the slaughter stock at this time. The act that provided for the suspension of the duty also provided for the issue of loans for cold-storage plants, to be built by anyone. The suspension of duty has a limitation, but the cold-storage provision will continue. The trade in chilled meat is in the hands of a monopoly.

I wish to call the attention of our cattle and sheep raisers to the fact that, while the United States has no refrigerator ships, plenty of ships can be chartered to bring good slaughter stock here. Horses and mules, which come in large numbers, reach this port in excellent condition without loss of weight, and it is to be presumed that the same would be true of slaughter cattle. It is stated that imported slaughter stock killed here gives better meat than even the live stock of the colony.

J. G. STOWE,
Consul-General.

CAPE TOWN, *December 7, 1899.*

FRENCH INTERESTS IN THE TRANSVAAL.

The French press is giving wide circulation to a recent report of the French consul-general in the Transvaal on the resources of that country. Interest in this subject is enhanced by the expressed opinion that "the Boers will be inclined to favor France as against other countries when the war is over;" also on account of the large interest that Frenchmen possess in Transvaal mines. A circular signed by the great economist and editor Paul Leroy Beaulieu affirms that the French possess not less than \$300,000,000 in Transvaal mining property, and that the French, German, and Dutch stockholders own probably more than half of the mines.

The French consul at Pretoria asserts that France does not enjoy the share in the commerce of the Transvaal "which the well-known sympathy of the Boers for France ought to assure her." Of 265,000,000 francs (\$51,145,000) of importations, France only supplies 8,000,000 francs (\$1,384,000) in leather, 4,000,000 francs (\$772,000) in fashionable goods, and 400,000 francs (\$77,200) of satins.

The consul states that in 1898 the Boers imported guns, swords, carbines, pistols, cartridges, lead, zinc, powder, caps, fusees, etc., to the value of nearly 2,000,000 francs (\$386,000). It is probable that several times this sum was imported in arms, of which no account was taken.

The Boers have built at Zuurfontein a dynamite factory, which in 1898 produced 300,000 cases of explosives, the greater part of which was sold to mining companies. The saltpeter, sulphur, and glycerin for the manufacture of these explosives come from abroad, a large portion from Germany. The consul points out that the country can not produce the raw material necessary for the manufacture of these commodities, and that the demand for them in the mines is destined to greatly increase. The yield of gold in 1898 was 406,015,750 francs (\$78,361,000), an increase of 114,672,000 francs (\$22,131,000) over 1897. The mines give employment to 92,806 hands, and their net profits in 1898 were 154,707,600 francs (\$28,858,000). The diamond product of 1898 was 1,093,250 francs (\$210,900), against 287,500 francs (\$55,500) in 1897.

The French consul points out that, during 1898, 16,700,000 francs (\$3,223,000) of coal were taken out of the Transvaal coal mines, and that the capacities of the mines are infinitely beyond the consumption. He says that—

When we shall have built railroads in Madagascar, it will not be necessary to import coal from Europe, as the Transvaal companies now find it difficult to dispose of their product.

French stockholders in the Transvaal mines are moving for a combination of German, Dutch, and French interests. The foundation of the movement is the belief that if the English are victorious the cost of the war will be taxed upon the mines; that if the fortunes of war incline to the side of the Boers, a heavy tax may be imposed upon outside stockholders, which nonbelligerents wish to avoid.

JOHN C. COVERT,
Consul.

LYONS, *December 26, 1899.*

RAILWAY AND OTHER ENTERPRISES IN NORTHERN BRAZIL.

In the upper part of the Madeira River, one of the principal affluents of the Amazon, there is a most excellent opportunity for the investment of capital. I refer to the building of a railway from Santo Antonio do Madeira to Marmore. This road was first projected some thirty years ago and is to be only 100 miles long. Its principal object is to avoid the falls of the Madeira River, which interfere with navigation, and its importance can be understood when it is considered that the Madeira River, which can be navigated for 1,204 miles, is the natural exit for Bolivian products. Bolivia has no seaport; it lost Cobija, on the Pacific, during the war with Chile, and all its export and import trade would be done by this railway. The Madeira River is quite deep, and vessels of any draft can navigate it. Once the road is built, direct navigation with Europe and the United States can be established.

After the overthrow of the Brazilian Empire, the republican Government gave the concession for the enterprise to an English firm. A company was formed; but, not knowing the region or the peculiar customs of the people, it failed and abandoned all the material it had taken there, including locomotives, rails, machinery, etc. Soon afterwards a concession was obtained by a Frenchman, who, on account of the employment of impracticable methods, soon exhausted his limited means. It is reported that his entire interest can be purchased at a great sacrifice. This appears to be a rare opportunity for the safe investment of capital. A rich rubber belt surrounds this road, and the agricultural possibilities of the country are excellent. The Bolivian Government would also, I am informed, grant a subsidy. Engineers representing several large syndicates have passed here recently on their way, it is said, to the Upper Amazon region. It is currently reported that Mr. Charles R. Flint is behind the chief syndicate which is investigating the advisability of completing the railway.

Another good opportunity for the investment of capital is the building of an artificial port and docks at Manaus. This is a very important port, with steamship service to the United States and Europe every ten days. Hundreds of river steamers are forbidden by law to go up or down the Amazon or its tributaries without first entering the port at Manaus and obtaining permission from the authorities. During the dry season or low tides, the Rio Negro recedes 500 to 1,000 meters from the city, preventing vessels from coming up to the quay or docks. The city of Manaus is situated 5 miles above the point where the Rio Negro empties into the Amazon. The largest vessels in the world can ascend the Negro.

The port must be so constructed as to permit vessels to come up to the docks at any time of the year. The Federal Government is willing to guarantee to the builders the use of the grounds acquired from the river to make the artificial port; the right to collect a given amount according to tonnage on the ships which come to the docks, and on the cargoes loaded or unloaded in the port; the right to build warehouses and collect storage fees, and to build repair shops, shipyards, etc. The cost of the works may be estimated at about \$2,500,000.

Building storage houses would be remunerative. It is an everyday event to see steamers from the United States and Europe for ten days in port, waiting for room to store their merchandise, and the delay in waiting for lighters to take cargo for Europe and the United States is as long. These delays are due not only to the lack of storage houses, but of lighters as well; and Para suffers from the same conditions. In Manaus, the river front is filled with storage houses. There is no room for more there, and the commerce being in the hands of the Portuguese, who are ultra-conservative, no effort is made to construct others. An island just across the river would be available for this purpose. This would necessitate the acquisition of a fleet of lighters to do the transportation.

For the building of the port, it is necessary to obtain authority from the Federal Government. The contract would be given to the State of Amazonas and then to any party or syndicate willing to undertake the execution of the concession.

The Brazilian Government, and especially the States of Para and Amazonas, are always ready to aid enterprises contributing to the development of the territory, such as railways, telegraph lines, steamship lines, banks, etc.

Another important enterprise would be the building of a dry dock in Para. The vessels that call here, of both river and ocean lines, number hundreds annually. This is the place where pilots are hired. There are many accidents, due to the great trees that come down the river, causing serious collisions. The owners of the

vessels are forced to send them to Europe because of the lack of a dry dock in Para. On the South American coast on this side of the Atlantic, there are but few dry docks. The Brazilian Lloyd Company has one in Rio de Janeiro, but this is kept constantly busy with the steamers of the company. The Brazilian Government has two in Rio de Janeiro, which are also employed all the time with the Government boats. There is another small one in Rio de Janeiro and one in Montevideo belonging to private concerns, but they are not enough for the demand.

With the dry dock, a carpenter shop and a naval foundry ought to be constructed. The dock should be built a little farther up the river. In front of the city the ground is dear, and the water is low in many points. There is, however, a place about 10 miles from the city that is excellently situated for the purpose, and, the ground being all sand, the work could be quickly done with dredges. The Government is about to build a branch of the Braganza road, which will put the place I refer to in direct railway communication with Para City.

The establishment of steam sawmills on the Upper Amazon would be a good investment. In spite of the thousands of miles of dense forests containing rich and strong lumber, the steamers running between here and New York bring pine from the United States on every trip. The reason for this state of affairs can be very easily traced to the lack of sawmills and inland means of transportation. In some parts of the Amazon, it is not necessary to wait for the establishment of railways to carry the lumber down the river. Nature is doing the work free of charge by sending down with the current a large number of trees. Two mills are kept busy all the year around with the logs floating down the river. They often come so fast and with such terrific force that they are a serious danger to navigation.

The building of a railway to British Guiana, with branches to Colombia and Venezuela, would open new and most important markets for United States goods. The region through which this road would pass is inhabited, and is filled also with cattle ranches. This industry is, however, paralyzed by the lack of transportation facilities. Both in Para and Manaos there is quite often great scarcity of beef, and it brings high prices. The road would cross a dense belt of rubber trees; also a region containing rich woods, cocoa, and other products of value, all of which find easy markets. The land is almost level, and no difficult work, such as the opening of tunnels, would be required. The country is filled with wood—some as hard as iron—which would facilitate work.

English capital is seeking this field with eagerness, and by and by there will be no more opportunities, all concessions having been

given. It is true that there have been here, during the last six months, a score or more of American engineers, employed in railways, electric roads, and amusement enterprises; but there is no reason why there should not be many times this number. Para and Manaos are progressing in rapid strides. The current of immigration is strong.

The two States of Para and Amazonas are the wealthiest in Brazil; they give a larger amount of income to their respective governments, in proportion to territory, than any of the others, and they are free of debt. This is easily explained by the fact that the principal product—rubber—has no competitor, and goes up in price with the increase of demand, while coffee, sugar, tobacco, and the other products of the south have competitors all over the world, depreciating their values every day.

The population of Para has doubled during the last five years, and new industries are springing up constantly. Manaos owes much of its progress to the American spirit of enterprise. The trolley line built by Mr. Charles R. Flint has proved a great success. Before this railway was built, nobody ventured into the streets at night; now, the entire population comes out for a ride of evenings. The road is too short to satisfy the people, and will be extended from 15 to 20 miles very soon.

This is the season for an increase in trade, both in imports and exports. The Argentine Republic is making an effort to introduce its flour into northern Brazil. After the recent visit of the President of the Argentine Republic to Rio de Janeiro, President Rocca promised the Argentine flour mills that he would try to obtain special concessions for them in Brazil in the way of reduced duties. A consignment of 4,000 bags was sent to Para. The merchants, however, declare that the Argentine flour can not take the place of the American product, as it is higher in price and comes in bags instead of barrels, spoiling much quicker because of the dampness of the climate.

The trade with Iquitos, in Peru, has so increased that the steamship lines to that port are about to double the number of steamers employed.

K. K. KENNEDAY,
Consul.

PARA, *November 21, 1899.*

Under date of December 8, 1899, Mr. Kenneday adds:

The government of the State of Para is about to build a railway to connect Pinheiro with Para. Bids are asked to build and operate this railway, which would be of importance in connection with the building of a dry dock in the port of Para.

Pinheiro is a seashore village, 7 miles from Para, where the wealthier part of the population of this city spends the summer and where the public employees and laboring people (who are very poorly paid here) reside all the year around. The fresher air of Pinheiro induces the former class to visit it; the cheaper rents compel the latter to live there.

Pinheiro is destined to a prosperous future. The Amazon River is low when it reaches Para, is filled with sand banks, and is dangerous to navigation. The masts of sunken ships can be seen here and there above the water. Farther up the river the vessels can lie in deep water, hence the reason for choosing Pinheiro as a situation for the custom-house.

The capital of the railway company is guaranteed a certain interest by the government of the State of Para. American capitalists interested in investments of this nature should lose no time, as advance agents of English syndicates are on the spot.

The conditions of the contract are as follows:

(1) The bidder will place in the treasury, as a bond, \$1,800. If his proposal is accepted, he must deposit another \$1,800 as a guaranty that he will fulfill the contract.

(2) The bidder will state the period he wishes to exploit the road, after which the railway will become the property of the government.

(3) The company will state the capital needed, which must not exceed \$350,000.

(4) The bidder must state what rate of interest he wishes the government to guarantee. He must not ask for more than 6 per cent.

(5) The bidder must state if he wishes exclusive privileges for the exploitation of the road.

The government is willing to grant fifteen years' privilege for the working of the road, beginning from the date of opening. It will also give the company the ground for the road, as well as for the depots, gratis. The government will give 40 meters (131.2 feet) frontage for each station, and will compel the owners of private property needed for the road to sell it to the company. As soon as the road is opened, the government will stop the subsidy it now pays to the Amazon Steamship Navigation Company, to run boats to Pinheiro. The bidder must present his plans and studies of the road three months after the date of the contract.

The arrival here of the representative of Messrs. Swift & Co., the well-known Chicago packers, will be a source of pleasure to those interested in the expansion of our export trade. I have done all in my power to further the development of trade between the United States and northern Brazil, and it is gratifying to see that American manufacturers are recognizing the opportunities here. Swift & Co. will

erect a cold-storage plant of large dimensions. Representatives of the Baldwin Locomotive Works Company have just mounted some locomotives and cars built for the Braganza road; other important firms have sent engineers here to put up windmills, ice plants, and various products of American industry. Imports from the United States into this port are increasing largely.

Collins & Co., the hardware manufacturers, of Connecticut, are steadily extending their trade throughout the Amazon Valley. The superior quality of their goods is well established. Steps, however, should be instantly taken to prevent foreign manufacturers using their name on goods of inferior quality. Traveling agents who have been on both the Pacific and the Atlantic coasts report that these sharp practices are in evidence all over South America. The same is true here in reference to red drills of certain American manufacturers, which foreigners imitate with an inferior quality, using labels similar to those on American drills.

No effort is being made to introduce American shoes; they would have a large market if of light weight.

COFFEE PRICES IN BRAZIL.

I wish to call attention to the rise in the price of coffee which has taken place during the last two months. Within a few days, sales have been made at 15 milreis (\$2.10) an arroba (32.38 pounds) for No. 7, the standard Rio coffee. The prices prevailing at the end of June, July, August, and September were 10, 9, 9.2, and 9.8 milreis (\$1.55, \$1.46, \$1.45, and \$1.44), respectively, while the sterling value of the milreis at the same time was approximately 7½d., 8½d., 7½d., and 7½d. At present, the rate is about 7d. to 7½d. On October 2, the price advanced to 10.2 milreis (\$1.43); on the 9th, to 10.6 milreis (\$1.49); and on the 11th, to 11 milreis (\$1.55). October 23, the closing price was 11 milreis. From the 1st to the 22d of November, the price ranged from 12.4 to 13 milreis (\$1.74 to \$1.83). On the 28th of the month, the sales were made at from 14.8 to 15 milreis (\$2.08 to \$2.11).

While the price of coffee has thus materially advanced, the fall in exchange makes the difference expressed in foreign-money values less than the actual increase in the amount of milreis would indicate. It has been sufficient, however, to create a decidedly interesting local market.

In this connection, it is worthy of note that the shipments of coffee to the United States from this port during the three months ended September 30 amounted to 655,501 bags (86,722,782 pounds), valued at \$4,138,143, as compared with 476,013 bags (62,976,520

pounds), valued at \$3,413,613, for the corresponding period of last year.

During the month, an English sailing vessel will take a cargo of 70,000 bags (9,261,000 pounds) to New York, shipped by one firm. It is said that this is the largest cargo of coffee ever carried by a sailing vessel out of the Rio de Janeiro harbor.

Shippers complain that it is impossible to secure vessel room for the coffee already purchased, despite the fact that the freight rates are 50 cents and 5 per cent primage per bag. Every available foot of room is taken on the regular ships, and many extra vessels have been pressed into service.

WILL L. LOWRIE,
Vice-Consul-General.

RIO DE JANEIRO, *December 2, 1899.*

BRAZILIAN EXCISE TAXES: COTTON GOODS.

It seems probable, from the data that have been published, that the new excise tax placed on cotton goods by the last session of the Brazilian Congress will materially improve the local market for our manufacturers. I have been informed by representatives of houses in the United States which make a specialty of cotton textiles that even under the former regulations Brazil has offered a fairly good field and a reasonable profit. While the new tariff law will in a measure protect the local factories, the excise tax will materially assist the importer.

The articles added to the impost list by the recent act of Congress, with the amount of the tax, are as follows:

(1) Hats, for men and boys. Each hair or straw or similar hat, 300 reis (4.35 cents); of felt, castor, rabbit skin, and the like, 500 reis (7.25 cents) each; of Chile, Peru, Manila, and similar straw, valued at 10 milreis (\$1.45), 200 reis (2.9 cents) each; over that valuation, 2 milreis (29 cents); silk hats and clagues, 2 milreis; woolen hats and clagues, 200 reis. Hats for women and girls of value not exceeding 5 milreis (72.5 cents), 200 reis; from 5 to 20 milreis (72.5 cents to \$2.90), 500 reis; from 20 to 50 milreis (\$2.90 to \$7.25), 1 milreis; over 50 milreis, 2 milreis; hats of native manufacture not exceeding 2 milreis in value being exempt from tax.

(2) Umbrellas and parasols covered with woolen, linen, or cotton stuff, or mixture of same, 500 reis (7.25 cents) each; covered with silk or mixture, 1 milreis (14.5 cents); with trimmings of any kind, 1.500 milreis (21.75 cents); umbrellas and parasols with gold or silver handles or metal work, 2 milreis (29 cents).

Walking sticks: Value 5 milreis (72.5 cents) each, 200 reis (2.9 cents); 6 to 10 milreis, 500 reis (7.25 cents); 11 to 50 milreis (\$7.25), 1 milreis; over 50 milreis, 2 milreis (29 cents).

(3) Textiles: Unbleached cotton, 10 reis (0.0145 cent); white, undyed, 20 reis (0.029 cent); prints, 30 reis (0.0435 cent); woollen textiles, mixtures of woollen and cotton, alpacas, such as brocades, cabourgs, woollen linings, cords, ginghams and the like, twills, fancy cloths, baizes, fine baizes, dyed or stamped, 200 reis (2.9 cents); woollen or cotton cloth, woven cotton trouserings, cheviots, flannels, 200 reis; blankets, coverlets, shawls, ponchos, of wool or mixture of wool and cotton, 300 reis (4.35 cents).

(4) Jute textiles (hessians), 30 reis (0.0435 cent).

The milreis value at the present rate of exchange is approximately 14.5 cents. One milreis equals 1,000 reis.

W. L. LOWRIE,

Vice and Deputy Consul-General.

RIO DE JANEIRO, *December 2, 1899.*

BRAZILIAN TARIFF CHANGES.

Consul Furniss sends from Bahia, under date of December 20, 1899, translation of a law passed in November, making certain alterations in the customs rates, to take effect January 1, 1900. With the exception of these changes, the tariff authorized by the law of December, 1897, will be in force. The revised tariff is to be duplex, with maximum and minimum rates, the minimum being the existing tariff with the alterations made in this law, while the maximum demands double the duties specified by the minimum. The Government will indicate to the customs department which are the countries whose products shall be subjected to the minimum and maximum rates, the Government having the right to modify such rates entirely or partially and to adopt a differential tariff for articles of foreign production compensating concessions made to articles of Brazilian production, etc.

The following are the principal articles in regard to which changes have been made, with the new rates:

Articles.	Unit.	Duty.*		Rate of duty.†
Hats (hare, otter, or beaver, or of horsehair):		<i>Reis.</i>		<i>Per ct.</i>
Untrimmed	Each	6,400	\$0.896	.....
Trimmed	Ad valorem			60
Food products:				
Meat, dried	Kilogram	120	.0168	.....
Butter	do	1,200	.168	50
Margarin and substitutes	do	2,400	.336	.....
Sardines	do	600	.084	.....

* In the following reductions, the market value of the Brazilian milreis is taken at 14 cents. As the value fluctuates, the statement is only of temporary utility.

† For calculating warehouse charges.

Articles.	Unit.	Duty.		Rate of duty.
Food products—Continued.				
Rice—		<i>Reis.</i>		<i>Per ct.</i>
In husk.....	Kilogram.....	40	\$0.005	.....
Hulled.....	do.....	60	.008	.....
Wheat flour.....	do.....	25	.003	.....
Beans.....	do.....	60	.008	.....
Indian corn.....	do.....	30	.004	.....
Wheat in grain.....	do.....	10	.001	10
Potatoes.....	do.....	40	.005	.....
Beer:				
Of milk, or in extract.....	do.....	1,700	.238	60
Common—				
In barrels.....	do.....	750	.105	60
In bottles.....	do.....	500	.07	60
Hydromel, cider, ginger ale, and other fermented beverages:				
In casks.....	do.....	600	.084	60
In other receptacles.....	do.....	400	.056	60
(Tare allowances for wooden casks, 20 per cent. Imports in bottles or other receptacles pay on gross weight.)				
Absinth, brandy, rum, cognac, whisky, etc.:				
In casks.....	do.....	1,500	.21	60
In other receptacles.....	do.....	1,300	.182	60
Geneva:				
In casks.....	do.....	800	.112	.....
In other receptacles.....	do.....	400	.056	.....
Rectified spirits.....	do.....	500	.07	60
(Tares as in the case of beer.)				
Bitters, amer picon, fernet, vermouth, and similar beverages:				
In casks.....	do.....	500	.07	50
Otherwise.....	do.....	300	.042	50
Champagne and other sparkling wines.....	do.....	1,600	.224	50
Not specified:				
To 14° alcohol absolute—				
In casks.....	do.....	340	.047	50
Otherwise.....	do.....	220	.03	50
Over 14° to 24° alcohol absolute—				
In casks.....	do.....	500	.07	50
Otherwise.....	do.....	300	.042	50
Over 24° alcohol absolute—				
In casks.....	do.....	600	.084	50
Otherwise.....	do.....	400	.056	50
Salt, common (unrefined).....	Liter.....	30	.004	.....
Wood:				
Logs, beams, masts, spars, and blocks—				
Oak or teak.....	Cubic meter.....	55,000	7.70	.....
Mahogany, satin, or other cabinet woods.....	do.....	44,000	6.16	.....
Pine.....	do.....	14,500	2.03	.....
Unspecified.....	do.....	20,000	2.80	.....
Planks, boards, etc.—				
Oak or teak.....	do.....	50,000	7.00	.....
Mahogany and other cabinet woods.....	do.....	40,000	5.60	.....
Pine.....	do.....	13,200	1.84	.....
Unspecified.....	do.....	18,800	2.63	.....
Veneer.....	Kilogram.....	2,000	.28	.....
Inlaid.....	do.....	50,000	7.00	.....
Pieces of timber imported ready cut and fitted of whatsoever kind will pay 30 per cent in excess of the duties for rough sawn or worked timber as specified above. Unclassified timber (couçoeiras) of whatever kind of wood over 15 centimeters' thickness will pay the same rate as logs, beams, blocks, etc.				

Articles.	Unit.	Duty.		Rate of duty.
		<i>Reis.</i>		<i>Per ct.</i>
Common planed deal cases, unjoined.....	Kilogram.....	130	\$0.018	.....
Common children's cots.....	.....	.....	.....	60
Chairs, plain wooden, with straw seats, with or without arms.....	.....	.....	.....	60
Brooms, with or without handles.....	Dozen	10,000	1.40	.....
Packing cases:				
Common pieces for packing wine, beer, etc.—	.....	.....	.....	.....
Unjoined	Kilogram.....	100	.014	.....
Joined	do	130	.018	.....
Common pieces for cigars, perfumery, etc.—	.....	.....	.....	.....
Joined or unjoined.....	do	500	.07	.....
Common pieces for matches—	.....	.....	.....	.....
Unjoined	do	320	.046	.....
Joined and finished.....	do	400	.056	.....
Cotton and manufactures of :				
Cotton—				
In pod.....	do	100	.014	.....
Raw	do	400	.056	.....
Yarn—				
Unbleached	do	500	.07	.....
Bleached	do	600	.084	.....
Dyed	do	700	.098	.....
Thread	do	2,000	.28	.....
Prints, unclassified—				
Weighing between 40 and 75 grams per square meter	do	3,400	.476	.....
Weighing more than 75 grams.....	do	3,000	.42	.....
Damasks, stripes, checks, etc.—				
Weighing between 40 and 100 grams per square meter.....	do	5,000	.70	.....
Weighing more than 100 grams per square meter.....	do	4,000	.56	.....
(Embroidered textiles pay 40 per cent more.)				
Woolen and other textiles :				
Baizes in cylindrical pieces for paper-making machines.....	do	1,000	.14	.....
Woolen shawls.....	.....	.....	.....	60
White or colored woolen blankets.....	.....	.....	.....	60
Cloths, flannels, etc., weighing 450 grams per square meter.....	Kilogram.....	8,000	1.12	.....
Open fancy cloths—				
Weighing 80 grams per square meter.....	do	18,000	2.52	50
Weighing over 80 grams per square meter.....	do	10,000	1.40	.....
Hessians.....	do	650	.091	60
Hessian bags.....	do	800	.112	60
Bareges.....	.....	.....	.....	60
Silk shawls.....	.....	.....	.....	60
Cravats.....	.....	.....	.....	60
Unclassified silk textiles.....	.....	.....	.....	60
Clay glass:				
Clay tubes and pipes.....	Kilogram.....	100	.014	.....
Clay flasks or vessels for electric insulators, etc.....	do	200	.028	50
Glass bottles, etc., without stoppers or ground neck	do	150	.021	.....
(Tare for bottles, in barrels, 40 per cent; in crates, baskets, or hampers, 30 per cent; in cases for breweries or for wine, gross weight.)				
Table glass, quality 1.....	do	700	.098	.....
Other unspecified glass, quality No. 1.....	do	1,100	.154	.....
Harness for tramways.....	Set	40,000	5.60	.....
Bits or bridles.....	Kilogram.....	1,000	.14	60
Paper pulp.....	do	10	.0014	.....

Articles.	Unit.	Duty.		Rate of duty.
		Reis.	\$o.	Per ct.
Machinery:				
Chord hand organs, over 100 chords with finger board..	Each	300	\$o.042	.....
The following will be considered as component parts of portable engines or tenders, their wheels and corresponding axles, the tires of the wheels, boilers, and fire boxes, even if imported separately. Portable engine wheels, axles, and poles will only be considered as integral parts when imported at the same time as the engine.				
Machines for cutting and ironing flounces, cutting tobacco, ice machines, etc.	Kilogram.....	300	.042	.....
Apparatus for hatching chickens.....	do	200	.028	.....
Metal sheets in cylinders for paper making.....	do	1,200	.168	.....
Gratings of iron or wood, or columns, ladders, balustrades, etc., requisite for erection of machinery, as also chimneys, etc., will be considered as parts of the machine when imported together, but when imported separately will pay 20 per cent ad valorem duty.				
Unclassified separate pieces that can be recognized as intended for machinery and not applicable to other uses will pay at the same rate as their respective machines, excepting otherwise specified in the tariff.				
Dolls:				
With clockwork.....	do	4,800	.672	60
Unspecified.....	do	1,500	.21	60

The 60 per cent rebate allowed on duties on prospectuses, catalogues, and cards for advertising purposes is suppressed.

CATTLE FAIR IN URUGUAY.

The cattle fair at Paysandú, inaugurated December 3, 1899, was the first ever held in the Republic of Uruguay. It was modeled indirectly after the general plan of similar fairs in Chicago. It is acknowledged by all the leading men here that this cattle fair is one of the things that will most promote cattle breeding in the Republic.

Uruguay has always been a great cattle country; its cattle—"criollo"—were similar to our Texas cattle and even smaller in size, wilder in nature, and very light in weight. In the past fifteen or twenty years, these small "criollo" cattle have been graded up with Durham, Hereford, Devon, Holstein, etc., and it has been demonstrated at Paysandú that the Republic has very good stock crossed with the above-mentioned breeds. Since the fair, even the most conservative estancieros are buying thoroughbred bulls, convinced that there is no use in bringing up steers weighing 400 to 500 kilograms (870 to 1,088 pounds) when with the same trouble and care with a Durham, Devon, or Hereford cross, and in the same space of time, their steers would average from 650 to 750 kilograms (1,433 to 1,653 pounds).

The "Exhibición Feria," as this cattle fair was called, because it was not alone for the sale of the cattle, but more especially to distribute prizes for the best products shown, was opened by the Minister of Fomento. No less than 3,500 persons, interested in cattle, sheep, and horses, and many of them producers or "estancieros," assisted at the opening. The minister called attention to the proposed improvement of the port of Montevideo; the canalization of Almiron, a shallow bar on the River Uruguay before getting to Paysandú; the proposed port of Paysandú; the improvements of the inland roads, for which a special fund is provided; etc.—showing that the Republic is slowly but steadily progressing. He expressed the hope that the example set by Paysandú would be followed by the other Departments of the Republic. To some extent it has been followed; in Rocha, the easternmost Department, and in Tacuarembó, the most central one, cattle fairs of the same kind are to take place within a few months.

The Department of Paysandú is one of the richest and most progressive of the Republic, and, as has been demonstrated, now produces the best cattle for beef. The sheep are very fine, especially the French Merino class called "Rambouillet;" Lincolns are very good, too; but the ones that attracted most attention were some descendants of a few imported here several years ago from one of the celebrated Vermont breeding farms. The horses do not amount to anything, but they have what they need—good "criollo" horses for working the herds. Hogs are very scarce, as in the rest of the Republic. There were only two pair of Berkshires in the show, of rather good class.

There were six large sheds about 10 meters (33 feet) wide and 30 meters (98.4 feet) long, made of American pitch pine with galvanized iron roofing. They were used as follows:

(a) For horses of different breeds, which included both light and heavy draft and for the saddle.

(b) For sheep, which included the very best of French Merino, Vermont, and Lincoln.

(c) For Hereford cattle, same being very fine, both in shape and weight, sometimes reaching to very high figures.

(d) For Durham (shorthorn) cattle, which were the best of the cattle there exhibited; one bull under 4 years weighed 1,050 kilograms (2,315 pounds).

(e) For other breeds of cattle, including Hereford, Jersey, Holstein, Swiss, and a few Devon, which attracted the attention of all, but were too young to compete with the Durham bulls.

(f) For second-class sheep, dogs, hogs, poultry, etc.

For animals brought up without shelter, there was a stockade

made of hardwood, divided in sections to hold eight animals each. Altogether, there were about seven hundred animals.

The sales made amounted to about \$55,000 gold, or, generally speaking, an average of \$80 per head, the highest being \$936 gold. Three shorthorn cows, 2 years old, brought \$486 gold each. Steers raised in pasture sold at an average of \$28 each and the grade cows at \$22 each. A Merino ram, of Vermont lineage, sold at \$450.

It should be remembered that 80 per cent of the cattle of Uruguay are used for the purpose of making "tasajo," or jerked beef, for exportation to Brazil, Cuba, and Puerto Rico. The Liebig's Extract of Meat Company, Limited, consumes probably an average of 150,000 head of cattle, and the balance is used for home consumption. No cattle are exported to Europe on foot as yet, but it is hoped that the market will be entered soon. At present, there is no port where cattle can be embarked; but a concession has been granted for such a port at Buceo, within the municipal district of Montevideo.

ALBERT W. SWALM,
MONTEVIDEO, *December 13, 1899.* *Consul.*

WOOL PRODUCTS OF URUGUAY.

The wool clip of Uruguay in late years has been found a most profitable investment on the part of the "estancieros," and just now a phenomenally high price rules, with an average clip to reap its great benefit. The scarcity of wool in the world's markets gave the prices a rapid advance in August, and many sold at \$4.70 per 10 kilograms (22 pounds). For some years, the wool clip of Uruguay has been sold in lots of 10 kilograms and not by the single kilogram, save only when a fraction appeared in the scale on sale. The price has constantly advanced, and sales have been made at \$6.10 (\$6.33 in United States gold) for 22 pounds, or about 30 cents the pound. No such price has ever before been paid in Uruguay, or much above one-half of it. The average of the sales, however, is \$5.40 per 10 kilograms, and the clip will reach market at about that figure, as buyers have covered the sheep-raising Departments to contract for every bale. When it is considered that the highest previous average rate per 10 kilograms was \$2.63, the importance of the increase may be appreciated.

By the courtesy of Mr. Bentley Swinden, manager of the barraca of Barclay, Macintosh & Co., the official trade returns of wool production for the years named and average prices paid have been

obtained. The prices given are for mestiza fleece wool, and the total production includes all the wool—criolla and belly wool.

Year.	Production.	Average price per 10 kilograms.
	<i>Kilograms.</i>	
1894-95	39,157,334	\$2.17
1895-96	50,765,037	1.90
1896-97	42,850,227	2.54
1897-98	51,678,340	2.27
1898-99	46,400,000	2.63
1899-1900	44,000,000	5.40

Nearly the entire clip has been bought or contracted for on European account and is being rushed forward very rapidly.

ALBERT W. SWALM,

MONTEVIDEO, *November 20, 1899.*

Consul.

COMMERCIAL TRAVELERS IN URUGUAY.

Consul Swalm, writing from Montevideo under date of November 3, 1899, in answer to inquiries from the director of the Philadelphia Museums (to whom the letter has been forwarded), says in substance:

The winter months—from May to September—are the most suitable for the visit of commercial travelers to Uruguay. Samples are not taxable at the customs; the agent, however, must give a bond that they will be reexported. The tax on commercial travelers is \$100; they should carry passports. Expenses for a month's stay would be about \$300, including some entertainment of buyers.

Commercial travelers generally make arrangements with houses to serve as "introductores" and the special lines are shown in these establishments. Few foreign travelers go out of the city. The trade of the interior is usually looked after from Montevideo, at which port 90 per cent of the imports enter. Houses in Montevideo have information as to the credit of their clients. There is no general commercial rating, such as Dun and Bradstreet furnish.

I think that at the present time commercial travelers would hardly meet with success here, except to learn market conditions, for which they would be valuable. Our trade in South America, in my opinion, can be made remunerative only by following the lines laid out by French, German, and English houses. It would pay to establish agencies to sell United States goods exclusively. Wherever this

plan has been earnestly carried out it has met with success, and there should be more efforts in this direction.

We need better freight transportation to this country. The Houston Line has had two steamers arrive here after a trip of twenty-two days from New York—the best time ever made; ordinarily, the voyage takes twenty-eight to thirty-five days. Our goods should also be packed more carefully. When our merchants place their goods here as quickly and in as good condition as those sent from foreign countries, they will win the market. Of course, banking facilities need attention; but this is a matter that will regulate itself when the other conditions are rectified. The French and Germans are making energetic efforts to capture the trade in these countries. Their representatives are everywhere; I met them in upper Parana during the month of August, and they came out only when the bubonic plague stopped traffic. They all work through local houses. One need only watch the discharge of cargoes on the moles to see how German, French, and Belgian trade has grown in the past two years.

The fact that Uruguay is on a gold basis makes trade much easier than in countries where fluctuating paper currency is used. The dollar here is worth more than ours; it is valued at \$1.034 in our currency. We should increase our business with this promising country.

MONTEVIDEO PORT WORKS.

Minister Finch sends from Montevideo, under date of November 10, 1899, copy of the bill for constructing port works in that city, as passed by Congress and approved by the President. The text of the bill as submitted to Congress was printed in *ADVANCE SHEETS* No. 532 (September 19, 1899); *CONSULAR REPORTS* No. 230 (November, 1899), page 470. The principal changes are as follows:

The President is authorized to expend up to \$12,500,000 gold, taken from the resources voted to that effect, in the execution of the works. The financial commission in charge of the work shall pay the certificates issued by the technical administrative office in gold, unless the contractor accepts payment in port obligations. The commission is authorized to negotiate the placing of the port obligations within or without the country, under the conditions indicated; also, to pledge up to \$2,000,000 of the obligations, if it is found necessary to provide funds for the payment of work certificates, or while awaiting a favorable opportunity for the placing of the bonds, or to guarantee the contract—all with the permission of the Executive.

The technical administrative office may issue provisional certificates, two-thirds of the value of which shall be paid by the financial commission. The provisional certificates shall represent the specified value solely of the materials of certain importance accumulated in the country for the port works. In this case the contractors shall declare, on applying for the certificate, that the materials may be acquired by the State on the latter completing the payment.

The contractor who undertakes to carry out the port works shall in no case have a right to be indemnified for losses or damages to his installations and material, of whatever kind, or whatever the nature of these losses or damages, or the causes of the same, even in the case of their being produced by force majeure, or when they do not arise from any want of foresight, or from deficient means, or from misuse of those means.

Force majeure may be invoked only in case of losses, damages, or prejudices caused to works already executed or to material in situ, "for extraordinary accidents the consequences of which it had not been possible to foresee and avoid." The contractor must report these cases of force majeure to the technical administrative office within ten days.

The assignments of revenue to the work are made with the reserve that the Chambers may authorize other financial operations preferentially guaranteed by these revenues and with exclusive application to the port works already contracted. In both cases, the product of the \$7,050,000 of port obligations or of the loans that may be authorized shall be entirely assigned to the construction contract.*

An additional export duty of 1 per cent is also imposed, to take effect November 9, 1899.

Minister Finch adds:

The law has defects that will be noted, but intending bidders should not overlook the authority given the President to modify its provisions. The construction of a port here is a large undertaking. Probably \$15,000,000 will be expended in the accomplishment of the work. But the Government of Uruguay is in earnest, and I believe the port will be built; I also believe the contractors will be regularly and promptly paid in accordance with the terms of their contract.

*The printed copy of the bill, as transmitted by Mr. Finch (taken from a Montevideo newspaper), as the following comment by the editor:

"We can not help thinking that there has been an oversight in the drafting of this article. As it reads, the sum applicable to the construction is only that arising from the \$7,050,000 of the port obligations; although, according to a previous article, \$12,500,000 is assigned to the work."

The editor also calls attention to the fact that the law throughout refers to the special taxes created as licenses (patentes), not duties, though in reality they are the latter. The object of this is to save them from the percentage deducted from the ordinary customs duties for the service of the foreign debts and the railway guaranties.

If my information is correct, there will be not less than \$3,000,000 to the credit of the port-construction fund by the time the contract is let, even should it be concluded at the earliest probable date after submitting proposals—say, four months.

The Department has also received a translation of the new port law from Consul Swalm, of Montevideo, under date of November 14, 1899.

ADDITIONAL TARIFF IN VENEZUELA.

I send herewith a translation of an executive tariff decree from the Gaceta Oficial of January 5, 1900, which went into effect immediately upon publication. The duties are excessive. Flour, which formerly paid 25 bolivars (\$4.83) per bag of 89 kilograms (196 pounds), now pays 40 bolivars (\$7.72). Most of the goods imported from the United States suffer in like proportion. Exports also pay an additional duty. Many houses have canceled their orders by cable, as the high duties are liable to be reduced at any time in the near future.

The tariff has been changed three times since August, 1899. Below is a translation of the decree.

LOUIS GOLDSCHMIDT,

LA GUAYRA, *January 7, 1900.*

Consul.

ARTICLE I. The following articles which are shipped to this Republic will bear an additional duty, which will be called "war duty:"

Articles.	Duty per kilogram (2.2046 pounds).	
	<i>Bolivars.</i>	<i>Cents.</i>
Flour, from wheat imported into the country.....	0.15	3
Tobacco (picadura).....	.60	12
Brandy, or cognac and essences, up to 22° Cartier.....	3.00	58
Wine, red or white.....	.60	12
Stearin, unmanufactured, pure as well as mixed with paraffin (commercial stearin).....	.20	4
"Batisage," or felts, without trimmings, for hats.....	1.50	29
Leather, manufactured.....	4.00	77
Perfumery (all kinds).....	1.50	29
Oil, not perfumed, except kerosene.....	.20	4
Butter, pure.....	.60	12
Cheese.....	.75	14
Alimentary preserves.....	.75	14
Hams, untinned.....	.75	14
Sausages.....	.75	14
Cassimere, woolen or mixed with cotton.....	3.00	58
Biscuits, of whatever kind, and packing.....	.75	14
Rice, in grain or flour.....	.10	2

ART. II. Articles and merchandise not comprised in the preceding enumeration will undergo an increase of 20 per cent upon the tariff duties declared by decree of November 7 last past.*

ART. III. The "war duty" will also be effective upon articles and merchandise exported to foreign countries, as follows:

Articles.	Duty.	
	<i>Bolivars.</i>	
Hides of cattle, deer, or goats.....per 50 kilograms (110.23 pounds)...	8	\$1.54
Coffee.....per 46 kilograms (101.4 pounds)...	1	.19
Cacao, sweet ocumare and the like.....per 50 kilograms (110.23 pounds)...	8	1.54
Cacao, tuy and the like.....do.....	6	1.16
Cacao, trinitario and the like.....do.....	4	.77

CUSTODY OF SHIPS' PAPERS IN VENEZUELA.

Minister Loomis, of Caracas, under date of November 28, 1899, sends translation of a recent decree, according to which masters of foreign vessels in Venezuelan ports are at liberty to deposit their papers with the consular officers of their respective countries, instead of with the port officials, as the usage has been. The decree reads:

[Translation.]

MINISTRY OF FINANCE,

Caracas, November 22, 1899.

Resolved:

According to the provisions of article 44, law 16, of the finance code, the sailing license and other papers of foreign ships arriving at Venezuelan ports must be deposited with the chiefs of the custom-houses at said ports, to be retained by them until the final clearance of the ships; repeated complaints having been made by merchants and shippers that the carrying out of this law presents difficulties of a nature entirely foreign to what was contemplated when said provision of the finance code was incorporated into the Venezuelan fiscal laws; observing, too, on the other hand, that almost all the other countries of the world, Venezuela included, require the masters of their ships to deposit their papers with the consular agent of the nation to which they belong; therefore, the Supreme Chief of the Republic, animated by a desire to extend to commerce the greatest facilities, and at the same time with a due regard to the national interests, has seen fit to repeal, temporarily, said article, so that hereafter the consuls, instead of chiefs of the custom-houses, shall take charge of ships' papers; provided always that said papers be first presented to the customs authorities. This resolution is to remain in force until the legislative power shall consider and definitely dispose of the matter.

Let this be communicated and published.

For the National Executive.

R. TELLO MENDOZA.

* See ADVANCE SHEETS No. 609 (December 21, 1899) and CONSULAR REPORTS No. 233 (February, 1900), p. 266.

TARIFF CHANGES IN MARTINIQUE.

During the ordinary session of the general council, held at Fort de France last November to establish the budget for 1900, some changes were made in the customs tariff. The increases in pilotage dues, interpreter's fees, and dock dues took effect on January 1, 1900, while the increase on tobacco will become operative in March, 1900.

I give below translation of the several amendments to the tariff:

PILOTAGE DUES.

ARTICLE I. From and after January 1, 1900, the collection of the accessory taxes on navigation shall be made according to the following tariff on French or foreign vessels, from France or French possessions or foreign ports:

Class.	Amount.	
	<i>Francs.</i>	
30 tons and under.....	12	\$2.40
30 to 60 tons.....	18	3.60
60 to 100 tons.....	43	8.60
100 to 150 tons.....	65	13.00
150 to 200 tons.....	82	16.40
200 to 250 tons.....	100	20.00
250 to 300 tons.....	118	23.60
300 to 350 tons.....	135	27.00
350 to 500 tons.....	153	30.60
Above 500 tons.....	153	30.60

Plus 25 centimes (5 cents) per ton or fraction thereof.

INTERPRETER'S FEES.

These are, for foreign vessels from any port:

Class.	Amount.	
	<i>Francs.</i>	
20 tons and under.....	10	\$2
20 to 40 tons.....	15	3
40 to 60 tons.....	20	4
60 to 80 tons.....	25	5
80 to 100 tons.....	30	6
100 to 150 tons.....	35	7
150 to 200 tons.....	40	8
200 to 300 tons.....	50	10
300 to 400 tons.....	60	12
400 to 500 tons.....	80	16
Above 500 tons.....	80	16

Plus 5 francs (\$1) per 100 tons or fraction thereof.

TOBACCO.

ARTICLE 1. Duties on tobacco shall be as follows, per 100 kilograms net (220.46 pounds):

Articles.	Amount.	
	<i>Francs.</i>	
Leaf tobacco.....	100	\$20
Smoking tobacco.....	300	60
Snuff.....	300	60
Chewing tobacco.....	300	60
Cigars.....	500	100
Cigarettes.....	500	100

ART. 2. The rates above indicated shall become the uniform schedule, replacing the general or maximum customs tariff, as well as the minimum tariff.

The above schedule shows an increase of 100 per cent over the duties hitherto paid on the same class of goods since March 30, 1893.

A further municipal duty, or "droits d'octroi," of \$5 per 100 kilograms net (220.46 pounds) is paid to the customs on tobacco in leaf, coarse and fine, and tobacco in carrots. Smoking and chewing tobacco, snuff, cigars, and cigarettes are exempt from the octroi duty.

DRY DOCK.

I may further add for the information of the Department that, on the following rates:

	<i>Francs.</i>	<i>Cents.</i>
To enter dry dock.....per ton...	2.00	=40
To sojourn, per day.....do.....	.40	= 8
For fastening and other expenses.....do.....	.92	=18.4

a reduction of 50 per cent is accorded to the steamers of the Compagnie Générale Transatlantique (the French Line), on both the entrance-to-dry-dock and sojourn taxes, which favor has also been extended to the ships of the French Cable Company.

A late decision of the general council allows a 50 per cent reduction on all dock charges in favor of French men-of-war. A reduction of 25 per cent is accorded to men-of-war of all other nations.

A. TESTART,
Vice-Consul.

ST. PIERRE, *January 3, 1900.*

ECONOMIC CONDITIONS IN HAITI.

The severe business depression in Haiti noted last year has not only continued, but is supposed by conservative business men to have increased. Importations are restricted closely to the necessities of life, and a fall in the prices of home productions has diminished exportations. Money has shown all the sensitiveness of a barometer in its fluctuations, the premium on gold varying from day to day anywhere within the limits of 125 and 200 per cent, without any appreciable cause. The rumor of an attempt to negotiate a loan, or of a minor financial operation, or of an incipient insurrection has been sufficient to cause the premium to take an upward or downward leap, accordingly as the report was favorable or unfavorable to commercial improvement and stability. The trade with the United States, although it has fallen off very materially from its former proportions, has not suffered in an exact ratio with the general decline on account of its character, the importations from the United States being confined almost wholly to provisions and the tough, cheap cotton goods worn by the masses.

The most probable causes of this industrial depression are the disordered condition of the finances, the heavy export duty on staple products, and the want of capital to develop the natural resources of the country. A large proportion of the silver money has been bought up at less than its intrinsic value during this period of high premiums and shipped off to New York, where it has probably been melted down. The guaranty for the paper in circulation is the export duty on coffee, and this duty has become so high that it is stifling production, an anomaly in which the weight of the prop is contributing to the collapse of the very structure it was designed to support.

There is probably no other country in the world where capital is so greatly needed as in Haiti, or where it ought to yield greater results, all things considered. Capital invested here, with proper security and protection—and it is believed that security and protection are now easily obtainable—ought not only to yield a handsome profit, but, if coupled with the introduction of improved modern methods and appliances, would create a vast market for agricultural and mining implements, railway and electrical supplies, machinery, and general manufactures. The present demand for the simplest of these things is very small and for most of them entirely wanting. And yet millions of acres of the most fertile lands in the world, suited to the growth of all species of tropical products, are either wholly

idle or cultivated in a spasmodic and primitive fashion. It is the natural soil for the sugar cane, and yet no sugar is made. Tobacco of a superior quality can be grown, and yet all the tobacco consumed is imported. The Haitian orange is probably second only to the Florida orange in the delicious and juicy character of its pulp; but, notwithstanding this fact, there are no orange groves. Lands capable, in quality and extent, of enriching so small a country through the cultivation of the banana alone remain untouched. Even coffee and cacao, the staple products, are left almost wholly to nature. There are vast quantities of mahogany and other cabinet woods and deposits of unknown extent of iron, coal, and other minerals.

The projected railroad from Cape Haitien to La Grande Rivière, referred to at some length in a previous report from this consulate,* is now well under construction and, being the only one in the Republic, promises to be an important factor in the development of the country. The concession for the enterprise, as amended and now in force, is the most liberal one ever granted by the Haitian Government, allowing the formation of a joint-stock company in which foreigners not only can hold shares, but are able through their holdings to acquire a controlling interest. One of the most active members of the syndicate is an Englishman, a merchant residing at Cape Haitien. All material for the construction and equipment of the road is admitted free of duty. The concession is for sixty years, and the Government offers to guarantee an interest of 6 per cent on \$24,000 per kilometer in the construction. The Government also grants to the company for a period of twenty years the tolls of an iron bridge at the Cape Haitien terminus, which at present amount to \$800 a month in Haitian currency. The distance from Cape Haitien to La Grande Rivière is only 15 miles, but the concession includes the privilege of constructing branch roads to Ouanaminte, a distance of 35 miles, and to Limbé, about 19 miles. The region through which these roads are to pass is one of the most fertile plains on the island, adapted to the cultivation of all the tropical products for which Haiti is noted. The Government lands granted to the company include 4,000 acres specially suited to banana growing. Deposits of coal and iron have been discovered within easy access of the road, for the exploitation of which concessions can be secured by the company. The company is now soliciting capital to complete these roads, cultivate the fertile lands included in its grants, and develop the iron and coal mines in the neighborhood. It is believed to offer an unusually enticing field for the investment of American capital.

Following is a statement of the exports and imports, port of Cape

* CONSULAR REPORTS No. 216 (September, 1898), p. 121, and ADVANCE SHEETS No. 184 (August 4, 1898).

Haitien, for the six months ended June 30, 1899. It is proper to add that, in addition to what is here mentioned, some lumber was imported from the United States and salt from Turks Island. Small quantities of fustic, mahogany, wax, honey, and old copper were exported to Europe.

Exports, port of Cape Haitien, for six months ended June 30, 1899.

Articles.	To United States.		To Europe.	
	Quantity.	Value.	Quantity.	Value.
	<i>Pounds.</i>		<i>Pounds.</i>	
Logwood.....			4,256,750	\$25,858.00
Logwood roots.....	10,208,500	\$57,720.83	12,764,750	60,000.00
Goatskins	5,755	1,253.53		
Coffee			4,491,407	320,392.76
Cacao.....			364,841	38,213.78
Fustic	47,500	154.97		
Wax	800	178.83		
Hides.....			61,940	5,906.24

Imports, port of Cape Haitien, for six months ended June 30, 1899.

From—	Quantity.	Value.
	<i>Tons.</i>	
United States.....	2,424	\$209,381.72
Europe.....	521	107,326.95

LEMUEL W. LIVINGSTON,
CAPE HAITIEN, November 8, 1899. *Consul.*

RUBBER IN MEXICO.

In answer to a request for information from a resident of Kentucky (to whom the letter has been forwarded), Vice and Deputy Consul-General Hardy writes from Mexico, December 26, 1899:

Land suited to the growth of rubber can be had anywhere from \$1 to \$15 per acre. The titles will be found vested in private ownership; none are in the Government. The land will in all cases be a dense jungle. Cacao, pineapples, and bananas can be grown as well as rubber. Prairie or grass land is not adapted to this product.

Rubber may be planted from branch cuttings, root cuttings, and from trees grown in the nursery from seeds. From 150 to 300 trees are set to the acre, and they are tapped anywhere from five to fifteen years after planting, according to the locality.

Under the most favorable conditions, a tree will yield an average of 1 to 2 pounds of rubber. The present market price at Frontera

is \$1.44 Mexican (about 67 cents in United States currency) per pound. The tree is long lived and the production increases with age. No machinery is required for handling the gum.

The rubber plantations of Mexico, as a rule, are remote from centers of population; they are always thinly inhabited. Oriental labor must be imported. The approximate wage is \$1 silver (47 cents gold) per day. Knowledge of the language of the country is desirable for a person about to engage in the cultivation of rubber.

As to the comparative cost of living in the United States and Mexico, I will say that if a man is content to live in Mexico as the natives live, he can exist very cheaply; but if he desires to live here in the manner to which he is accustomed in the United States—eat the same food, prepared in the same way—it will cost him a great deal more than at home.

The rubber tree of Mexico is found growing from the Guatemalan boundary as far north as Tuxpan on the Gulf coast, and as far north as Colina on the Pacific coast. The maturity of the tree and its production are measured by the quantity and uniform distribution of the rainfall, together with high temperature throughout the year. In low altitudes, localities of 150 and 200 inches of rainfall distributed over eight or ten months in the year enjoy the best conditions, although rubber does grow where they have six months of rain and six months of dry weather; but in these localities, it requires from twelve to fifteen years for the tree to mature, while in districts with an ample rainfall it will flower within five or six years.

THE CAPE NOME GOLD FIELDS.

The indications are that there will be a great rush to Cape Nome next spring, something like that to the Klondike in the spring of 1898. It is evident that numbers will go there from Victoria and this Province in preference to either Atlin or the Northwest Territory. The transportation companies here and on the Sound are all actively engaged in preparing steamers for the long trip. The distance from Victoria to Cape Nome is 2,500 miles, entirely by water. But, notwithstanding that fact, the transportation companies have already booked all the passengers that can be carried on the first trips on every vessel that can be secured. At a recent meeting of representatives of the companies it was computed that 65,000 persons desired to go to Cape Nome as soon as possible.

The reports that had been circulating last season in regard to the gold discoveries at Cape Nome were quite generally disputed here, the opinion being that the Atlin and Klondike countries were more

promising and also easier of access. But the last two steamers from the north effectually dispelled all uncertainties, the passengers bringing with them indisputable evidence that all along the beach in the vicinity of Cape Nome gold in paying quantities can be had for the digging.

A number of these men have called at the consulate, exhibiting specimens of the gold, saying they dug it on the beach, near the water's edge; that men with only hand shovels and the simplest and rudest of pans cleared from \$50 to \$100 and even \$300 per day, while sometimes a clean up of from \$1,000 to \$1,500 has been reported. Nuggets worth from \$300 to \$400 were found near Anvil Creek, and it is believed \$300,000 to \$400,000 were taken out of Snow Gulch last summer; one man, it is said, took out \$190,000, while another claims still more. Every one of the men who came down expressed his resolve to return in the spring—some even engaging return passage on the steamers on which they came down. According to their statements, the gold does not extend to a great depth, 5 or 6 feet being as low as any have yet found "paying dirt."

Complaint was made by some of the returning miners that claims—20 acres each—which stretched for miles around and virtually embraced the whole shore from Cape Nome to Cape York, some 40 miles distant, had been staked. This, however, has been much changed by the decision of Commissioner Hermann, which is understood to mean that no land below ordinary high tide can be disposed of to individuals or corporations, but is open to the public to operate on; that the right to dig in these tide lands is as free as the right to fish in the adjacent waters; and that anybody may wash gold out of the sand between high and low water, while no authority can give any person an exclusive right to do so; so that the land can not be obtained by corporations or syndicates.* Some apprehension is felt that there may be a clashing of interests on that point, and it is generally desired that the Government establish regulations and have sufficient police to enforce them. Anxiety is expressed here regarding the establishment of a port of entry at Cape Nome. Captains all agree that there is practically no anchorage or harbor at the cape itself, but that at Port Clarence, distant only a few miles, there is a harbor, safe and commodious.

There are now between 5,000 and 6,000 people at Nome City, Anvil City, Cape York, Port Clarence, and vicinity. The buildings are, of course, of the most temporary character. A large number are on the beach below high-water mark, which does not tend to

*NOTE BY BUREAU OF FOREIGN COMMERCE.—Inquiry at the Department of the Interior develops the fact that, according to a decision of the Secretary, no private individual under existing laws can acquire an exclusive right in land below low-water mark; consequently, the Land Department has no authority to make a grant of such land.

promote health, although the extreme cold of six months of the year precludes epidemics. Two newspapers are printed there, from which I take the following market quotations, current last fall:

Articles.	Price.	Articles.	Price.
Beef.....per pound...	\$0.75 to \$1.00	Potatoes.....per cwt...	\$10.00 to \$15.00
Wood.....per cord...	35.00 to 50.00	Onions do.....	10.00 to 15.00
Flour.....per cwt...	10.00	Tomatoes.....per can...	3.00
Butter.....per pound...	1.00	Coal.....per ton...	75.00
Canned milk.....per can...	.50	Shingles.....per bunch...	7.50
Canned meats and fruits, about...	.75	Lumber.....per 1,000 feet...	250.00
Maple sirup.....per gallon...	4.00		

Ruling restaurant prices.

Articles.	Price.	Articles.	Price.
Steaks.....	\$1.50 to \$3.00	Clam chowder.....	\$0.75
Reindeer steak.....	2.00	Sardines.....per box...	1.00
Pork chops.....	1.50	Chicken tamales.....	.75
Mutton chops.....	1.50	Pork and beans.....	.75
Boiled mackerel.....	1.50	Cheese, with any order.....	.25
Coffee and doughnuts.....	.50	Ham and eggs.....	2.00
Hot cakes and maple sirup.....	.75	Three eggs.....	2.00
Corned-beef hash.....	1.00	Fruit and jams, all kinds...each...	.50
Pickled pigs' feet.....	1.00	Coffee, tea, or chocolate.....	.25
Mush and milk.....	.50	Pies each...	.50
Oyster stew, lobsters, etc.....	1.50	One loaf of bread.....	.25
Ham or salmon.....	1.00	Welsh rarebit.....	1.00
Hamburger steak.....	1.50	Coffee, with bread and butter....	1.00

An ordinary two-story dwelling of eight rooms rents frequently for \$200 a month. Freight taken from the beach, where it is landed from steamers in barges, costs from 35 to 40 cents per cwt.; for the delivery of heavy freight by horse team and wagon, \$10 an hour is charged.

The ruling price for a shave is \$1 and for a hair cut \$1.50. A bath costs \$2. Fifty cents is charged for laundering a flannel shirt, 75 cents for washing a colored linen shirt, and \$1 for the rehabilitation of the rare and luxurious garment known as the white shirt. Cigars and drinks cost 50 cents each. Longshoremen have been paid \$2 an hour for their labor. Carpenters receive \$1.50 an hour.

The prevailing fare to Cape Nome just now from Seattle or Victoria is \$100 for first-class and \$80 for second-class passage; freight, \$40 per ton. The earliest date at which any of the steamers are advertised to leave for Nome is May 1, 1900.

ABRAHAM E. SMITH,

VICTORIA, December 21, 1899.

Consul.

MINING IN THE YUKON: ROUTES TO CAPE NOME.

The weather for the past month has been comparatively mild, the thermometer ranging from 15° above zero to 18° below. This exceptional mildness at this season of the year has interfered materially with the working of claims, causing many mines to suspend work on account of water coming in the shafts and drifts, and, unless colder weather comes soon, the output of gold will fall far short of the estimate, which for this season has been calculated at \$25,000,000.

The board of trade has adopted a resolution petitioning the Canadian Government to extend the telegraph line to Forty Mile, and intends to petition the United States Government to carry the line to Eagle City, which will give a service from Skagway, Alaska, to Eagle City, Alaska. The benefits of this extension in regulating the movements of steamers and from a commercial standpoint would be very great.

The Cape Nome excitement continues unabated. Word recently received from Skagway is to the effect that many are making preparations to undertake the journey of 2,600 miles over the ice via Dawson. If all who are contemplating it make the trip this winter, there will be one continuous line of people from Bennett to St. Michaels.

The transportation companies here are fully alive to the possibilities of an early spring rush, as is evidenced by the presence along the water front of several steamers and barges having a combined carrying capacity of nearly three thousand passengers, which, for the first time in the history of the country, are wintering this far up the Yukon River.

It is now generally accepted that the route to Cape Nome via Dawson will bring the traveler to his destination fully four weeks earlier than by the sea route. This is based upon information given by sea captains versed in the condition of the ice in Bering Sea and along the coast between St. Michaels and Cape Nome. Another advantage is that those who so desire can get off at Nulato and take the Indian trail across the country to Cape Nome, which, though more difficult, saves over 100 miles.

Business in Dawson is very dull. Many restaurants and two hotels have been forced to close their doors for want of patronage.

Prices remain about the same, with apparently full lines of all staples.

RONALD MORRISON,
Vice-Consul.

DAWSON CITY, *December 8, 1899.*

NOTES FROM DAWSON CITY.

Preparations are being made by the Canadian Government for establishing the winter trail to Bennett, which, owing to an overland cut-off at Fort Selkirk, thence to Lake La Barge, will be 110 miles shorter than the route followed last year.

IMPROVEMENTS IN DAWSON.

While Dawson has lost in population during the past summer, it has gained in wealth, and is now a thriving, substantial town. The Yukon council has expended in building roads and trails during the year about \$70,000 out of the \$175,000 appropriated for this purpose by the Dominion Government. Considerable improvement work has been done on the streets, and \$15,000 has been expended on drains and ditches, which has had the effect of improving the sanitary condition of the town. Already many physicians have left Dawson for want of practice, and no less than five private sanitariums have closed on account of lack of patronage.

The town is now equipped with two steam fire engines, fourteen patent fire extinguishers, one hook-and-ladder truck, two hose carts, and 6,000 feet of hose, and has a paid fire department of twenty men. A working head of steam is kept on the engines at all times.

MINING.

The 10 per cent royalty on the season's output this last summer amounted to \$700,000; last year, the total collected was \$400,000. The output this year is generally estimated at \$15,000,000; last year it was less than \$12,000,000. The introduction of steam thawers, steam hoists, and other time and labor saving machinery on all the creeks has practically ushered in a new era in the working of the mines and should produce astonishing results. As we are now in telegraphic communication with the rest of the world, capital is fast following on the heels of the prospector, and the outlook for the coming season is most promising.

CAPE NOME.

The excitement caused by the reports of the phenomenal richness of this new camp has not by any means abated. Many will attempt to make the trip this winter down the river, which seems a foolhardy undertaking, considering the dangers to be encountered and the distance to be covered over the ice and snow.

It is generally admitted, however, that after the river opens the route to Nome by way of Skagway, thence down the lakes and rivers

past Dawson and on to St. Michael, is the most practical and safest. The spring floods drive the ice out of the Yukon River and away from the shore line between St. Michael and Cape Nome fully one month before the moving of the pack ice in the Bering Sea, which has to clear away before steamers can venture along the coast to Cape Nome.

RONALD MORRISON,

DAWSON CITY, *November 1, 1899.*

Vice-Consul.

WORLD'S PRODUCTION OF PRECIOUS METALS.

From an article in the *International Economist*, published at Berlin, under the title "The production of precious metals," I give the closing remarks, translated into English:

The year 1899 would have been a record breaker in the production of gold had it not been for conditions in South Africa, but in any event it can be estimated that the production will amount to 440,000 kilograms (968,000 pounds).

The Witwatersrand will probably, after peace has been restored, produce 5,000,000 ounces and the other districts in Africa another 250,000 ounces, or approximately double the production of 1897. The United States, Australia, and Canada also contribute an increase, so that the twentieth century will commence with a yearly production of about 460,000 kilograms (1,014,116 pounds), at a value of 1,283,000,000 marks (\$305,364,000), which means that the output of gold alone will exceed by \$119,000,000 the average production of gold and silver combined in the years between 1866 and 1870, the very years when the harmony of the open mints of the Latin Union had not been disturbed by any policy of demonetization. The fairy tale of the insufficiency of gold, of the appreciation of the value of gold and corresponding decrease of other values, has therefore to be consigned to the lumber room of bimetallist arguments. Nobody who has eyes to see and who notes the figures will believe that the present high price of money represents an enhancement of the price of gold in consequence of a gold deficiency. A comparison with more remote periods is even more striking. The world's total production since 1871—the date when Germany determined to abandon its silver basis—amounts to 6,087,288 kilograms (13,420,035 pounds) up to and including 1899. From the discovery of America in 1492 up to 1871, there were produced 8,658,175 kilograms (19,087,823 pounds). Within the last twenty-eight years, the world's production was therefore equal to two-thirds of the production of nearly four centuries preceding. Nevertheless, from 1492 to 1871 no fear existed of an insufficiency in the supply of gold, while from 1871 to 1898, in a period which produced in twenty-eight years two-thirds of what was produced in three hundred and seventy-nine years, this fear has been growing constantly. From 1492 to 1871, the annual average production was 22,900 kilograms (50,485 pounds). During the years of fear of an insufficient supply, the annual production of gold was 210,000 kilograms (462,966 pounds).

From the discovery of America up to the end of 1899, there will have been produced 14,748,403 kilograms (32,514,329 pounds), of which 40 per cent is to the credit of the years when the bimetallistic cries of distress were raised.

Is it not therefore perfectly clear that there has existed no lack of gold, and that the depreciation in the price of goods had no connection whatever with changes in the monetary systems? When, during the time of the discovery of gold in California and Australia (from 1856 to 1860), the supply of gold increased 1,008,750

kilograms (2,328,673 pounds), Chevalier in all seriousness preached a demonetization of gold; from 1894 to 1899, there has been a stream of 2,088,461 kilograms (4,605,321 pounds), and still the bimetallists talk of a scarcity of gold. If gold is scarce now, one is forced to ask, When was it ever not scarce?

The oft-predicted decrease in the production of silver also does not materialize. Enormous quantities of silver still come from the two chief producing countries—Mexico and the United States—and Mexico especially seems to be inexhaustible; how, then, can the price of silver increase?

Following is a statement of the production of silver in ounces fine; and we add that competent authorities expect for 1899 more than 170,000,000 ounces fine.

Country.	1896.	1897.	1898.
Mexico	45,718,982	53,903,180	56,738,000
United States.....	58,834,800	53,860,000	54,438,000
Australia	12,238,700	11,878,000	13,021,682
Bolivia	6,374,240	8,204,568	8,204,568
Spain.....	5,779,357	5,957,965	5,957,965
Germany.....	5,890,500	5,498,135	5,571,516
Colombia.....	3,407,004	5,047,328	5,483,717
Canada and Newfoundland.....	3,205,343	6,558,446	4,452,333
Chile	3,236,536	2,591,998	2,591,988
Peru.....	3,847,078	3,278,602	1,951,240
Austria-Hungary.....	1,863,921	1,970,332	1,814,294
Japan	2,068,068	1,685,818	1,659,856
Greece	1,028,608	1,203,184	981,356
Italy	875,763	737,163	804,512
Central America.....	808,676	811,892	716,008
France	525,628	542,913	542,913
Argentine Republic.....	328,170	383,479	383,479
Russia.....	336,127	284,625	278,492
Turkey.....	225,225	225,225	225,225
Great Britain	262,567	232,108	211,347
Norway	162,198	169,078	173,321
Sweden	17,822	20,728	65,345
Servia	18,322	18,322	18,322
Ecuador.....	7,734	7,734	7,734
Portugal		2,349	2,349
Total.....	157,061,370	164,073,172	165,295,572

RICHARD GUENTHER,

FRANKFORT, November 29, 1899.

Consul-General.

REFORM IN THE GERMAN CONSULAR SERVICE.

The "seniors" of the Merchants' Association of Berlin have addressed a memorial to the Prussian Secretary of Commerce, and at the same time to the Chancellor of the German Empire, which appears to be in response to an inquiry from the Secretary of Commerce, and states what reforms in the German consular service are deemed necessary. The following is a synopsis of the somewhat lengthy document:

The main duty of the consul should be to make careful and detailed reports concerning economic occurrences in his consular district. These reports should give not only the figures of the exports

and imports, but should also deal with the development of the commerce and the home industries of the country. The consul should be able to point out these conditions upon his own initiative, as well as in response to inquiries from home. He should be well informed about commercial matters at home, as well as in touch with the business world of his district. Means should be at his disposal for travel, and he should be compensated for services rendered. Knowledge of the language of the country, as well as of the leading languages of the world, should be of prime consideration. The promotion system of Great Britain should be followed, whereby consuls are transferred between countries where the same languages and similar economic conditions prevail, so that transfers of a consul from China to Russia and thence to Spanish America, for example, should be avoided. Reports concerning the commerce of the foreign country should give comparisons with previous years and be published at home in such a manner as to reach all interested.

The letter says that these requirements are more or less realized in foreign countries. The consuls of the United States of America especially have rendered very useful services to the commerce and industries of their home country and have furnished proof that the establishment of commercial consulates bears rich fruit, in spite of the fact that a consul can hardly acquire such special knowledge of trade conditions in the several branches as an agent of some business house.

The letter endeavors mainly to show the great desirability of substituting the large number of German "Wahlkonsuln"—i. e., German merchants resident in some foreign country who act as consuls—by regularly paid consuls, who will give their whole time to their consular duties, and states that a reform is expected mainly from an increased and improved service in the regular consulates, recommending the appointment of commercial attachés to the important consulates, as has already been done at Chicago, Buenos Ayres, and Constantinople.

It is recommended that the qualifications for appointment as consuls should be of a more practical nature and not so much the mere knowledge of law. It is stated that to carry out the reforms suggested, an increased appropriation for the consular service would be necessary, which may appear large compared with the present expenditure, but which would prove insignificant if the importance of the work accomplished is considered—that is, the increase of German commerce, especially the exports of German manufactures. The letter also calls attention to the great usefulness of the Philadelphia Commercial Museum.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *December 12, 1899.*

THE NEW CIVIL CODE FOR GERMANY.*

It may be interesting to know that on the 1st day of January, 1900, a new civil code will be adopted for the whole German Empire.

Up to this time, Germany has never had a universal civil code. There existed common legal views and tendencies, but every kingdom, principality, or dukedom in Germany had its own laws of old and new codes—for instance, the Rhine Province, situated in the Kingdom of Prussia, where my consular district is located, had the French code of Napoleon I in use.

All German law, to this time, has been based on the old Roman law; but it was found necessary to reform, from time to time, these laws to suit the new requirements of progressed civilization and local needs. A confusion of legal ideas at length ensued in the different parts of Germany. What was held right and lawful in one principality was considered wrong in another.

In the year 1867, when Prussia, victorious over the Austrian Empire, organized the Norddeutscher Bund (the North German Confederation), a faint desire for a general law started in the ranks of German jurists and diplomats; but it took almost eight years before the idea ripened among the people.

At the end of the year 1874, a committee of five of the most eminent German jurists was appointed to prepare a plan for a new civil code for Germany, but with special consideration of the laws existing in the different kingdoms, principalities, and dukedoms composing the newly formed Empire.

It took two years to draw up this plan, which in principle was favorably voted on by the German Congress, and a new committee of eleven prominent jurists from all parts of Germany was selected to make on this basis a new civil code.

This committee has worked for over twenty years, holding two sessions each week. Some members died during this time, others retired; but they were always replaced, and at last in the year 1898 the new code was adopted, with the understanding that it will take effect on the 1st day of January, 1900.

The civil code is divided into five books:

- (1) General part, a preparatory introduction.
- (2) The law on debts, regulating the intercourse between persons on matters embraced by the law on property.
- (3) The law on immediate handling of movables and immovables.
- (4) The family law, defining the rights and duties as to property, personal rights, rights of parents and guardians, and their duties.

*A report on this subject has also been received from Consul Warner, of Leipzig.

(5) The law on estates of deceased persons, defining the transfer of said estates.

I have to express my thanks to the Honorable Judge Retzlaff, of Plescher, who has very ably explained to me the new German code, and by opening for me his law library has enabled me to make a thorough study of the subject.

EDMUND Z. BRODOWSKI,

SOLINGEN, *December 7, 1899.*

Consul.

LAW COURTS IN GERMANY.

Under date of December 7, 1899, Consul Brodowski, of Solingen, transmits the following information:

It may not be out of place to give my experience as to the German "Schoeffengericht," which in some small degree can be compared with our justice-of-the-peace courts. These consider smaller cases, like petit larceny, disorderly conduct, battery, etc.

The court is composed of a professional judge and two assistants (selected from a venire of citizens), the prosecuting attorney, and a minute clerk. The presiding judge does the questioning of the delinquent and of the witnesses, but it is not forbidden for the assistants and the prosecuting attorney to propound questions if they see fit to do so. But the surprising feature therein for the American is the fact that the prosecuting attorney is at the same time the attorney for the accused.

After all the questioning has been done, the prosecuting attorney lays before the court the law on the subject. The fine varies according to aggravating or mitigating circumstances.

Only with prisoners whose records show many prior offenses does the prosecuting attorney give to the court these aggravating circumstances. On the contrary, he usually detects any and all mitigating circumstances which may prove to be beneficial to the prisoner, and recommends him to the clemency of the court by pleading for the lowest fine. Then the prisoner is asked what he has to say, and in most of these cases appeals to the clemency of the court. The court retires to a private room, returns a few minutes later, and the presiding judge passes the sentence. These sentences are in most cases so mild and in all cases so just and sensible that, as one of the judges here has stated to me, not one appeal has been taken throughout this whole year from the decisions of the court.

It is really a refreshing spectacle to see how the poor man, although a delinquent, gets the full, honest, and well-administered protection of the law.

NEW DEPARTURE BY THE BRITISH BOARD OF TRADE.

Heretofore the British Board of Trade Journal, a Government publication similar to the American CONSULAR REPORTS, has been issued monthly. Complaints have been freely made by the British press and by chambers of commerce that the information contained therein was often too late in reaching the public to be of much practical value, and comparison was made with the system of the United States Government in publishing daily ADVANCE SHEETS OF CONSULAR REPORTS. On the 4th instant, there appeared the first number of the weekly issue of the Board of Trade Journal. Its price is fixed at 1d. (2 cents), while the price of the former monthly issue was 6d. (12 cents). Considering the admitted conservatism of the British Government in such matters, this new departure is very significant. It is undoubtedly a manifestation of the newly awakened spirit in Great Britain in the direction of greater enterprise and more modern methods to meet ever-increasing foreign competition both at home and abroad, particularly from the United States and Germany.

Equally significant is the establishment of the new "commercial intelligence branch of the Board of Trade," the following particulars of which are taken from an official announcement dated the 1st instant:

The intelligence branch of the commercial department of the Board of Trade has been established with a view to meet the constantly increasing demand for prompt and accurate information on commercial matters, so far as it can be met by Government action. In deciding to establish this new branch, the Board of Trade have been largely influenced by the recommendations contained in the report of a departmental committee composed not only of representatives of the various Government departments concerned, but also of prominent representatives of commercial interests, which was appointed by Mr. Ritchie, the president of the board, in July, 1897. The committee referred to was requested to consider and advise (1) as to the best means of collecting and of disseminating among those interested prompt and accurate information upon commercial subjects, and (2) as to the collection of samples, especially of goods of foreign manufacture competing with British productions, and the exhibition of such samples to manufacturers and traders in this country. As a result of their deliberations, the committee recommended under head 1 the establishment of a new office, under the Board of Trade, on lines which the board have followed generally in the creation of the intelligence branch, and this branch is consequently intended to become a center at which information on all subjects of commercial interest shall be collected and focused in a form convenient for reference. In addition, it will be the duty of the branch, as far as circumstances permit, to afford information in reply to all inquiries on commercial matters which may be addressed to it, whether written or verbal. The

"intelligence branch" will endeavor, on application being made to it, to supply information with regard to the following subjects, viz: Commercial statistics, matters relating to foreign and colonial tariffs, excise and "consumption" duties; port, harbor, and tonnage dues, and other charges on shipping; customs regulations, consular fees, forms of certificates of origin, regulations concerning commercial travelers, trading licenses, foreign and colonial contracts open to tender, foreign and colonial bounties, lists of firms engaged in particular lines of business in different localities, etc. An inquiry room, at which copies of official publications, directories, and other works of reference may be consulted, is reserved at the offices of the branch for the convenience of personal applicants.

LIVERPOOL, *January 5, 1900.*

JAMES BOYLE,
Consul.

MUTUAL-AID SOCIETIES FOR FRENCH SCHOOL CHILDREN.

A great many mutual-aid societies, called *petit-cavés*, from their founders, Edouard Petit and J. C. Cavé, are now being organized among the school children of France. They are established under a law of 1856, amended and made more operative by a law of 1898. Their object is to afford assistance to their child members during sickness and to furnish a pension fund for old age, to be drawn upon when 50, 55, or 60 years old, according to the amount deposited or as the beneficiary may elect. The maximum pension is 360 francs (\$69.48).

The children deposit 10 centimes, or 2 sous (2 cents), per week, which is divided into two equal parts, 1 sou going to the mutuality fund for aid in sickness, and the other to the pension fund. This money is deposited in a Government depository, where it is invested in Government bonds and draws $3\frac{1}{2}$ per cent interest.

The especial feature of these societies is the aid given them by the Government. For every child who contributes during an entire year the State adds 1 franc (19.3 cents) to the common fund. It also gives a sum equal to one-fourth of the entire amount deposited by the children.

The 1 sou deposited weekly which goes to the pension fund can never be recovered except in the form of a pension. If the child dies before reaching the age limit, or for any reason drops out of the list of depositors, his sous go to the State. The money derived from the reserve fund passes to the next of kin in the event of the death of the depositor.

Every school child is given a "livret," or bank book, upon the cover of which is printed a brief tabulated statement of the pension rate that 1 franc will produce at the age of 55 if deposited in child-

hood. The table states that if 1 franc is deposited at 3 years of age, the depositor may draw 74 centimes (about 14½ cents of our money) annually when he is 55 years of age, and that this sum will be increased in proportion to the number of francs deposited until it reaches the limit of 360 francs (\$69.48) annually. The table computes the interest on 1 franc deposited when from 3 to 12 years of age, running up to 55 years.

The 1 sou deposited as a reserve capital, which swells the mutuality fund for sickness, does not draw as high a rate of interest as the pension fund. A franc deposited at 3 years of age will yield but 12 sous (12 cents) pension at the age of 55; but the depositor does not part with his reserve capital. If he should die before the age to receive it, his next of kin can take the entire accumulations derived from the 1 sou deposited weekly for the reserve fund, and the depositor in the meantime would receive the benefit of it during sickness. This capital is also swelled by national and sometimes communal appropriations, as well as by legacies and gifts from other sources.

There is a trust company in Lyons and a number of other cities, called the Caisse des Depots et Consignations, under the immediate direction of the Government, in which these mutual-aid funds are deposited, and by whose officers they are invested in Government bonds and other securities approved by the State. These moneys are also loaned to public institutions—such as hospitals, the Government pawn shop, etc.

The aims of the children's societies, as set forth in a circular addressed to all the parents of pupils, briefly stated, are:

To aid parents by paying them an indemnity, during the sickness of their children, of 10 cents per day during the first, and 5 cents per day during the second and third months of sickness.

To create annual pension funds from the payment of monthly dues, Government appropriations, and donations, which can be enjoyed by all persons after a membership of fifteen years.

To imbue all children at an early age with the elements of economy; to accustom them to the use of a bank book, and to the consciousness of having money at work earning something for them and held in reserve for their old age.

To create and maintain a fund called "trésor de l'avenir" (a treasury for the future), the product of which will be exclusively used to provide means of industrial education; to assist the depositors later in life to become members of mutual-aid societies, and to aid them in establishing themselves in business.

This society is very rapidly spreading throughout France, especially among the working classes, who look upon it as furnishing

more substantial relief than the savings banks. The latter are becoming gorged with money. The limit for any one depositor at present is 2,000 francs (\$386); but after August, 1900, it will be reduced to 1,500 (\$289).

There are other societies similar to those herein described, but they are more especially for men. They have recently taken a very wide extension in France and will be the subject of a future report.

JOHN C. COVERT,

LYONS, *December 29, 1899.*

Consul.

NOTES.

German Enterprise in Italy.—Consul Heingartner sends from Catania, under date of December 20, 1899, translation of a newspaper article on German interests in Italy. The Germans, it says, have taken possession of half of the traffic of the principal seaports. At Genoa, the business in grain and wine is almost entirely in their hands, and they are making progress in cotton and in artificial fertilizers. The navigation society "La Veloce," while apparently in Italian hands, is managed by Germans. They have taken advantage of the industrial protection inaugurated by Italy in 1878 and reenforced in 1887. Their capital is invested in factories for cotton spinning, for velvet making, for the manufacture of carburet of calcium, and of late for sugar making. The electric trams at Genoa, Florence, Bologna, Alexandria, Perugia, Cuneo, etc., as well as the lines about to be opened between Brodighera and San Remo, between Lecco and Chiavenna, between Oneglia and Porto Maurizio, are owned by four or five very powerful firms—Siemens & Haske, Scukert & Ganz, the Nuremberg Electrilitäts Gesellschaft, and the Continentale Gesellschaft. The Norddeutscher Lloyd, the Hamburg-American, and the Kosmos lines call at Italian ports. The perforation of the Simplon from the Italian side is undertaken by the German firm of Brandt, Brauman & Co., while Major Donath has a project now before the Italian Government to dry up the marshes of the Roman campagna. These undertakings find support in the powerful banks, branches of which are found everywhere. These are an important factor in the industrial expansion of Germany.

Demand for Mandarin Oranges in Europe.—Under date of December 20, 1899, Consul Skinner, of Marseilles, says:

American growers of oranges may be interested in knowing that a rapidly developing demand for mandarin oranges is noted throughout Europe. Fifty years ago this variety of orange, which had been introduced from China, was cultivated almost exclusively in Sicily and Malta, and sold at retail in Paris for from 7 to 10 cents for one orange. At present, the two islands named furnish none of the mandarins imported into France, and the sources of supply are Algeria and Spain. The trees are grown with some success even in

France itself, as far north as Nice, but the quality is not equal to that of the Spanish and Algerian fruit. It is thought that the present demand will steadily increase, and French horticulturists are exceedingly anxious to see Tunis become an exporting point. In 1892, the imports into France of mandarins were as follows: From Spain, 1,617,673 kilograms (3,566,300 pounds); from Algeria, 428,018 kilograms (943,600 pounds); from all other countries, 209,853 kilograms (462,600 pounds). In 1898, the importations had increased to 2,029,040 kilograms (4,473,200 pounds) from Spain, 2,054,765 kilograms (4,529,900 pounds) from Algeria, and 181,023 kilograms (399,000 pounds) from all other countries. The American effort to procure a hardy tree as well as a delicious and salable fruit might advantageously include consideration of orange culture in this section of the world.

The Hamster in Belgium.—Under date of Liege, December 19, 1899, Consul Winslow transmits the following statement relative to the ravages of the hamster in Belgium:

The farmers of this and adjoining provinces are very seriously annoyed by the hamster (*Cricetus frumentarius*), a small rodent, a native of Europe. It is remarkable for having a pouch on each side of the jaw, which it uses to carry grain and such articles as it consumes. A few years ago, this little animal made its appearance in this province from Germany, and has since increased very rapidly. Families have been found with sixteen young. They destroy grain, such as wheat, barley, rye, oats, etc., as soon as it becomes ripe, by gathering the kernel and storing it in their homes, which are large holes in the ground. As much as 170 pounds of grain have been found in the home of one of these families, as well as a quantity of beets and other roots. An association of farmers has been organized at Fexhe-Slins, near this city, which pays 4 cents per head for dead hamsters, and the Government pays the same price. In one precinct near this city, 300 hamsters were killed during the past year, for which the bounty was paid.

German Textile Exports.—Vice-Consul-General Hanauer, of Frankfort, under date of December 18, 1899, sends a clipping from the Confectionair, a leading organ of the German textile and clothing trade, as follows:

There seems little probability of a change in the present tariff rates of the United States. This condition is favorable to the Chemnitz textile manufacturers, as they have adapted themselves to conditions by marking their chief lines of goods at prices in accordance with the present tariff. Any change would disarrange the marking in these lines. Only on woolen and half-woolen articles would it be to

the interest of our manufacturers to have the rates reduced; but this is a futile hope, and therefore the export of these to the United States receives less and less consideration, especially as goods of this class are now produced in excellent quality and style by the domestic manufacturers of the United States. Only the very finest and lightest woolen textiles can now be exported by us to that country. Owing to the great advance in the price of yarn, these woolen textiles have increased in price so much that buyers protest.

Strikes in Germany.—Consul Worman, under date of Munich, December 9, 1898, reports that, according to official statistics, the strikes in the German Empire during the first nine months of 1899 were as follows:

Quarter.	Hands employed.	Number of strikers.	Laborers breaking contract.
First.....	17,680	8,896	3,642
Second	74,525	36,924	9,233
Third.....	85,956	32,480	10,548
Total.....	178,161	78,300	23,423

The Kingdom of Bavaria participated in the foregoing as follows:

Quarter.	Hands employed.	Number of strikers.	Laborers breaking contract.
First	861	626	171
Second	5,849	3,614	198
Third	5,591	3,152	272
Total.....	12,301	7,392	641

The majority of the labor cessations in the Empire, as well as in Bavaria, occurred during the summer months.

Dress-Trimming Industry of Eibenstock.—Consular Agent Harris, of Eibenstock, under date of January 3, 1900, writes:

The extent of the export of dress trimmings to the United States from Eibenstock depends entirely upon the prevailing fashion. The following figures show the export during the past six years:

1894.....	\$24,945.87
1895.....	91,153.56
1896.....	165,985.92
1897.....	209,274.60
1898.....	127,862.06
1899.....	91,821.97

This year promises to be much better than last. This, no doubt, is due to the fact that English houses are not placing as large orders this season as formerly. German manufacturers thus find themselves obliged to seek American buyers more than ever in order to make good this difference.

Decrease in German Exports to the United States.—Under date of December 6, 1899, Acting Consul J. F. Monaghan, of Chemnitz, transmits the following statement, showing the decline in leading exports from Germany to the United States:

Articles.	Amount.	Articles.	Amount.
Cotton hosiery:		Spun goods:	
1880	\$4,736,200	1885	\$119,000
1895	8,472,800	1892	2,475,600
1898	4,450,600	1898	999,600
Half-silk goods:		Leather, colored and glove:	
1889	18,088,000	1880	190,000
1898	4,996,000	1895	1,118,600
Woolen goods:		1898	714,000
1880	2,356,200	Fine leather goods:	
1895	7,092,400	1889	5,807,200
1898	2,189,600	1898	666,400
Silk and woolen clothing:		Leather gloves:	
1880	1,023,400	1889	4,736,200
1889	2,879,800	1898	1,570,800
1898	714,000		

Lumber Industry in Germany.—On January 6, 1900, Consular Agent Harris, of Eibenstock, says:

In 1890, 2,000,000 tons of logs were imported into Germany. In 1898, 2,600,000 tons were imported, an increase of 30 per cent. During this same period, sawed lumber increased from 1,200,000 tons to 2,200,000 tons, or an increase of about 100 per cent. Saw-mill owners of the Empire are beginning to agitate in favor of a higher tariff on sawed lumber. They claim that under the present tariff the import of logs will in time cease altogether, and thereby materially injure the mills, which work almost exclusively with hard wood.

Advance in Shoe Prices in Germany.—Under date of December 9, 1899, Consul Worman, of Munich, says that the Shoe and Upper Manufacturers' Union (Verband der deutschen Schuh-und Schäfte Fabrikanten) has, according to its official organ, the Schuhmarkt (Shoe Market), of recent date, served notice by circulars to

the trade that, in consequence of the marked rise in price of materials, such as leather, cloths (cotton and woollen), silks, nails, etc., a very considerable advance in prices must be made. It sets forth that prices have already been considerably advanced in the United States, Austria, France, and England.

German Bandage Trust.—Consul-General Guenther sends the following, dated Frankfort, December 16, 1899:

According to the German newspapers, there is hardly any branch of industry in Germany which has not been made the subject of a trust, in order to control prices and guard against the results of unrestricted competition. Recently, the German manufacturers of bandages met at Berlin to form an association. It was also proposed to establish a supervision of the production by medical officers of the Government, so that complaints from physicians, dealers, and the public might be avoided.

American Meats in Continental Europe.—Consul Winter, of Annaberg, and Consul-General Guenther, of Frankfort, in reports dated December 7 and 13, respectively, inform the Department that, owing to the competition of American meat on the continent of Europe, an organized effort is about to be made to combat its importation. The Austrian butchers, at their recent meeting, recommended a congress of the butchers of all the states of continental Europe for the purpose of deliberating upon ways and means of counteracting the growth of meat monopolies, protection against imports of unhealthy meat, raising of stock at home, and steps to be taken against American competition. According to German press comments, the butchers of Germany will join with those of Austria in almost any kind of an undertaking to keep out American meats. It is stated that the managers of the German Butcher's Association will soon meet for a discussion of the proposition of their Austrian colleagues.

American Fruit in Germany.—Consul-General Guenther, of Frankfort, on December 13, 1899, writes that local newspapers publish the following from Hamburg:

The ever-increasing import of American fruits has greatly increased the consumption of fruits in Hamburg and vicinity. The prices for fruits which formerly, with the exception of a few kinds, were high, have been somewhat reduced by these importations, so that it is now possible for the middle classes to become consumers.

Under these circumstances, excitement has arisen because the Prussian ministry has now instituted an inquiry as to whether a protective duty should be levied on American apples. The association of Hamburg dealers in fruits and vegetables has protested vigorously. There is no reason to doubt that the Hamburg Chamber of Commerce will take the same stand and will do everything to prevent the carrying out of such a plan.

Melons in Italy.—Consul Hayden, of Castellamare di Stabia, on December 12, 1899, says:

In this portion of Italy, muskmelons at best are very inferior to the American fruit, lacking the sweet flavor of our melon. Strange to say, however, this same melon when reserved for consumption in winter is very acceptable. A custom exists here of pulling the melon from the vine while green and hanging it up in the open air until winter, when it is eaten. The melon becomes not only far superior to the ripe fruit of summer, but quite equal to the American product. If this system could be adopted in the United States, it might prove of value.

Trade Conditions in Russia.—Under date of January 4, 1900, Consul Heenan writes from Odessa:

Patience and long credits are absolutely essential in order to do business in Russia. Russia, in a business way, is practically the great unknown. I would like to utter a word of warning to Americans attempting to do an indiscriminate business in this country. Much is published about the great opportunities in this country, but very little is told about the difficulties, losses, and embarrassments which are always met with by those who fail to take the proper precautions. In case of failure, the home creditors are usually paid, but the foreign ones are not. The fact that we have furnished the Russian Government with millions of dollars' worth of various goods and were paid for the same is gratifying. The Russian Government always pays, but discrimination should be used in dealing with the business element generally.

Russian Tariff Reductions on Coal and Iron.—Vice-Consul General Hanauer writes from Frankfort, January 19, 1900:

The St. Petersburg Gazette states upon good authority that the present tariff rates on coal, iron, and cast iron will soon be reduced on importations destined for factories in the Baltic and St. Petersburg districts, within 100 versts (66 miles) of the coast line. There is a great dearth of coal in Russia, culminating in a severe crisis. Many of the industrial establishments in Lodz, the center of Russian manufacture, have had to stop work or reduce the operating force

for want of coal. The prefect of this city telegraphed to the imperial governor of Petrikau to at once take energetic steps to give relief. Our American coal mining and shipping companies should seize the opportunity to inaugurate a coal-export movement to Europe.

Iron Companies in Russia.—Vice-Consul Monaghan writes from Chemnitz, December 16, 1899, that a stock company has just been formed in Irkutsk, Russia, with a capital of 1,000,000 rubles (\$515,000), to develop the iron fields lying in the neighborhood. It is intended to produce cast and refined iron. A company has also been organized in St. Petersburg with a capital of 6,000,000 rubles (\$3,090,000) to work iron mines in Siberia. A German mining engineer has been put at the head of the St. Petersburg company.

Electric Lighting in Greece.—In reply to an inquiry by the United States Export Association, of New York, Consul McGinley writes from Athens, December 2, 1899:

A company has recently been formed in Athens known as the Greek Electrical Company, with a capital of 5,000,000 drachmas (about \$600,000, at present rate of exchange). The founders are the Bank of Athens and the Société Générale d'Enterprise. The object of the new organization is to undertake the electric lighting of Athens, Piræus, Patras, Syra, and Kalamata. There are 50,000 shares, at 100 drachmas a share, but they are now selling at a premium, being quoted at 107 drachmas a share on the floor of the exchange of Athens. Bids can be addressed to the company direct or to G. A. Constantinides, 3 Corais street, Athens. I have not been able to learn when the company expects to start operations.

Lighting of Indian Cities.—In reply to an inquiry from an Ohio firm,* Consul Fee, of Bombay, on December 7, 1899, says:

The use of electricity as power and light is yet in its earliest stages in India, Madras being the only city using it as a motive power for street cars. Bombay is poorly lighted by gas, and her tramway is run by horse power (see my report on Bombay tramway of August 15, 1899).† This company has its main office in New York City, and the stock is owned principally in the United States. It has applied to the Bombay municipality for the privilege of converting its motive power to electricity. This will undoubtedly occasion

* To which the letter has been sent.

† ADVANCE SHEETS No. 548 (October 9, 1899); CONSULAR REPORTS No. 231 (December, 1899), p. 561.

other electric improvements. Electric lights are used in a limited way in the better class of residences and bungalows. Bombay is the best place in which to locate an agency. It is not only great in population (having over 821,000), but also in wealth and trade. One-third of all the exports from the United States to India come to this port. The systems of Indian railways as well as the steamship lines center here. The bulk of electric supplies now come from Europe. The United States during the past few years has been pushing her trade in this line, and the late steamers have had noticeable shipments of these supplies from New York.

Manufacture of Battik.—Consul Hill, of Amsterdam, on December 7, 1899, says:

I have just received, in reply to a request, a letter from Messrs. John Th. Uiterwyk & Co., of The Hague, respecting the manufacture of battik. This is the only firm in the Occident that manufactures this eastern product. Battik is made in the Dutch East Indies by the natives, who decorate their clothing with it. A piece of linen is taken and all kinds of designs are outlined upon it with a pencil. When the design is completed, the ornamented parts of the fabric are covered with a liquid which possesses the quality of stiffening after being applied. The parts not ornamented are dyed the color desired. After the entire fabric has been ornamented in this manner, it is boiled in hot water, so as to take the hard stuff out of the battik. The dyed parts will then hold the dye and the battik is ready. The Hague people were the first to introduce battik into Europe. It is made on linen, silk, velvet, and leather, and is exported to all the principal cities of Europe. Orders have been received from the Government to decorate the Netherlands department at the exposition at Paris in battik.

Clock Trust in Japan.—Consul-General Gowey sends from Yokohama, December 28, 1899, a clipping from the Yokohama Japan Mail, which, he says, may be of use in calling the attention of American manufacturers of clocks to the condition of the trade in Japan and to the competition to be expected in the markets of Siberia, China, and India.

Japanese-made clocks of the value of \$77,615, he adds, were exported during the year 1898. The clipping reads:

The manufacture of clocks in Japan has now entered upon a stage of prosperity, remarks the Tokyo Asahi. The output has not only proved sufficient to supply the demand in the interior, but a large number are exported to China, India, Siberia, and the various islands in the South Pacific. As a natural consequence of this,

however, competition has arisen between the manufacturers to such an extent as to bring about serious losses. To obviate this difficulty, the leading clock companies in Osaka—fifteen in all—recently formed a union and determined to carry out an arrangement from the beginning of next year, according to which clocks are divided into several classes, with fixed minimum value. Spurious manufacture is prohibited, and offenders are subjected to a penalty of not less than 1,000 yen (\$498). The offices of the union are to be established at Nagoya, while the expenses of its maintenance are to be met by a contribution of 1 sen (0½ cent) for each clock manufactured.

Railway Contract in French Africa.—Consul Skinner writes from Marseilles, January 6, 1900:

Announcement is made that on February 16, 1900, bids will be received for the construction of a railway between Konakry and the Niger, in French Africa. The work will be disposed of in two sections. Bidders upon the first must make a preliminary deposit as a guaranty of good faith, amounting to 20,000 francs (\$3,860), and, in case of an award, a final guaranty of 40,000 francs (\$7,720). The second section will be intrusted to a bidder who must give a guaranty of 100,000 francs (\$19,300); and all bidders upon this section must deposit 50,000 francs (\$9,650). The facts and conditions may be learned at the Ministry of Colonies, 3e Direction, 2e bureau, Salle 196, Paris; at the Marseilles Chamber of Commerce, and in other cities in France. The bids will be received at the Salle des Seances of the Permanent Market Commission, 4bis rue Jean Nicot, Paris, February 16, at 3.30 p. m., and in Konakry at the Government palace.

Trade Openings in South Africa.—Consul-General Stowe writes from Cape Town, December 9, 1899:

While the representatives here of export commission houses in the United States are cabling large orders for food stuffs, other supplies are wanted by the Government. Contracts for the building of railroads, for supplying the army, jails, prisons, public and private institutions, etc., are open for bids. If our manufacturers, owing to the brisk home markets, do not care to compete at present, they might be prepared to do so after the war, when there will be a "boom." The country will then be short of supplies, particularly in the line of food stuffs, and in many other directions the demand will be large. Vehicles, tools, harness, etc., will be needed. The destruction of furniture and household supplies has already been large. Telegraphic and railroad equipment, lumber, clothing, hats—the countless things required by a country emerging from war—will find a ready market. It behooves our manufacturers and producers to be prepared to obtain a part of this trade.

Bicycles in Antigua.—Consul Hunt, of Antigua, British West Indies, in response to the inquiry of a New York company,* writes, under date of November 27:

There are about fifty bicycles in this island (population, 35,000), as against half that number a year ago. All but four or five are of American manufacture, and are owned by natives. Three conditions militate against a more extensive use of the wheel, viz: The poverty of the people; the tropical heat, which renders riding between 8 a. m. and 4 p. m. almost impossible, especially for whites; and the abominable condition of the roads leading between the various points of the island. When it is stated that the method of road repairing in Antigua is to spread on the ground a thick layer of stone cut to about double the size of a walnut and leave it to be trodden down by passing ox carts or other teams, or the bare feet of native pedestrians, it will be appreciated that wheeling can be indulged in only under extraordinary difficulties.

Iron in Santo Domingo.—Under date of December 27, 1899, Consul-General Maxwell writes from Santo Domingo to a Baltimore correspondent, to whom the letter has been sent:

Near Cotui, a small town inland about 50 miles from the head of Samana Bay, there is said to be a valuable and extensive iron-ore deposit. The land belongs to the Government, but I think it can be obtained upon reasonable terms. The distance from the town to the river is about 12 or 15 miles, and the river is large and deep enough to allow boats of 15 or 20 feet draft to navigate it. The bar at the point in the bay where the river empties is an obstacle. That, however, I think could be dredged at no very great cost; but as to this, I can not speak with certainty. Labor is plentiful and cheap.

Coal and Iron Structure Wanted in Brazil.—The following cablegram, dated January 30, has been received from Minister Bryan, at Petropolis, Brazil:

San Francisco Railroad requests bids 5,000 tons soft coal yearly. Also all catalogues iron structure.

According to a report from the British consul-general to his Government in 1897, the San Francisco Railroad (Estrada de Ferro de S. Francisco) is in the State of Bahia, and had, at that date, 281

*To which the original letter has been forwarded.

miles under traffic. To obviate delay, bids for coal and all catalogues relative to iron structure should be addressed and mailed direct to Hon. Charles Page Bryan, envoy extraordinary and minister plenipotentiary of the United States, Petropolis, Brazil.

Consular Invoices Required by Brazil.—Under date of Bahia, December 16, 1898, Consul Furniss says:

In accordance with a Brazilian law of November 21, 1899—

Exporters of merchandise from foreign ports to any Brazilian port must, after January 1, 1900, present the following documents at the Brazilian consulate: Proof of the port of origin, with two invoices to be duly certified by the consul, one of which will be returned to the shipper, to be forwarded with the goods, the other being retained by the consul, who in turn will forward it to the statistical department.

As can be seen, this virtually puts into effect the same regulations relative to invoices as prevail in our service. Invoices have not heretofore been required by Brazil.

Silk-Spinning Spiders in Venezuela.—Consul Plumacher, of Maracaibo, under date of December 26, 1899, reports that large silk-spinning spiders are found in the palm trees of Venezuela. Some produce white, some yellow, silk. The consul understands that the silk has been made into handkerchiefs. A copy of the report, together with a specimen of silk which accompanied it, was referred to the Department of Agriculture. Under date of January 27, 1900, the entomologist says that silk produced in this way can not be made valuable commercially, because of the troublesome necessity of keeping the spiders separated to prevent their devouring each other. Their food being insects, this also involves considerable labor in supplying them. Attempts to utilize the silk of a Madagascar spider of the same species some years ago resulted in the discovery that the product was more expensive than ordinary silk.

Disposal of Trade Catalogues at Vancouver.—Consul Dudley writes from Vancouver, January, 1900, as follows:

I have received a large number of catalogues and price lists from manufacturers and merchants in the United States. So far as I have been able, I have brought them to the attention of dealers in this vicinity. Some time ago, the idea occurred to me of displaying these books in the rooms of the board of trade. I therefore wrote the president of the board, offering to send the catalogues and price lists to the rooms of the board. I have received a letter from the

secretary, in which he informs me that the board has voted to receive the catalogues and have them arranged so that the members can easily consult them. By this arrangement, all the prominent merchants in this vicinity are in a position to see and consult these catalogues without the trouble of visiting this office for that especial purpose. I hope this arrangement will result in an increase of the sales of American goods in this market.

Export of Pulp Wood from Ontario Prohibited.—Commercial Agent Shotts, of Sault Ste. Marie, on January 15, 1900, says:

The government of Ontario has decided that no pulp wood cut from Crown lands after the 1st of May, 1900, shall be exported from the Province. This step has been urged for some time, its advocates claiming that it would greatly stimulate the local manufacture of pulp and paper. It is stated that the Province of Quebec will also place on all pulp wood taken from Crown lands an export duty sufficiently high to practically prohibit its shipment. This will allow the cutting of this winter to be exported during the coming summer. New mills are being built at various places, advantageous situations are being sought, old mills are increasing their capacity, and the prospect is that the paper and pulp industry of Canada will assume large proportions in the near future. There were 37,073 cords of pulp wood exported from this district during the year 1898, 61,398 cords in 1899, and information received indicates a larger export for 1900.

Water Electric Power in Morrisburgh, Canada.—Consul Hamilton, under date of December 22, 1899, reports that, after many futile efforts, the mayor and the town council of Morrisburgh have obtained a lease from the Government for twenty-five years of 250-horse water power, to be used for the development of electric power for manufacturing industries, furnishing light for streets, houses, etc. This development will cost about \$30,000, as per estimate of hydraulic engineer in charge. This power can and will be materially increased as necessities may require. The council is using every means to get manufacturers to establish here, offering free water, light taxes, and a bonus.

River Improvements in Winnipeg.—Consul Graham, of Winnipeg, under date of December 23, 1899, writes:

The Dominion Government has undertaken the improvement of St. Andrews Rapids in the Red River of the North to facilitate the navigation of that river. These rapids obstruct the river about 18

miles from its outlet into Lake Winnipeg. They are about 8 miles in extent, and are the only serious obstruction to navigation between the international boundary and the lake. It is proposed to construct a system of dams and locks, with a lift of about 18 feet. The estimated cost of the work is \$700,000 to \$800,000. An appropriation of \$150,000 has been made and is now available. The necessary surveying has been done and plans and specifications are now being prepared. A call for tenders for the construction will soon be made, and it is expected to have the work under way in the early spring. I trust that a number of American contractors will bid for the work.

Canadian Butter in England.—Consul Brush, of Niagara Falls, under date of January 20, 1900, sends the following:.

The growth in the exports of Canadian butter to Great Britain is attracting general attention. In 1897, the average exports of butter from Canada to the English market were 3,500 cwts. (392,000 pounds) per month; in 1898, the average was 5,500 cwts. (616,000 pounds) per month; and during the first eight months of 1899, the average exceeded 14,500 cwts. (1,624,000 pounds) per month. In August, 1899, the tremendous total was recorded of 60,957 cwts. (6,827,184 pounds), or 220,232 pounds of butter per day. The butter is prepared especially for export, brings a high price, and the demand for it seems almost unlimited. The Minister of Agriculture has been especially active in promoting the sales of Canadian butter and cheese throughout Great Britain. The results of two years' work show possibilities that are worthy the earnest attention of United States shippers.

British Imports and Exports of Gold and Silver.—The following, dated Southampton, January 10, 1900, has been received from Consul Hopley:

The imports and exports of gold and silver bullion and specie into and from Great Britain for the year 1899, as compared with the years 1897 and 1898, were:

Description.	Imports.			Exports.		
	1897.	1898.	1899.	1897.	1898.	1899.
Gold	\$149,931,307	\$212,777,785	\$158,324,163	\$149,929,911	\$178,065,478	\$104,805,197
Silver	87,753,171	71,429,509	61,947,515	91,397,678	76,032,498	67,812,650
Total	237,684,478	284,207,294	220,264,678	241,327,589	254,097,976	172,617,847

Duties on Sulphuric Ether in the Netherlands.—Minister Newel, of The Hague, under date of January 9, 1900, transmits translation of a royal order regarding the exemption from import duties of sulphuric ether, required in the preparation of albumen from milk. The conditions are summarized as follows:

Description of the location of the factory must be forwarded to the Minister of Finance, who determines the quantity to be admitted free. After surety for the import duties is deposited, a waybill shall be issued. The removal of the liquid to the factory shall take place under seal, under official supervision. Import duties on any excess of the quantity allowed free shall be recovered from the surety. Reservoirs, distilling apparatus, and other implements must be connected and capable of being placed under lock and seal; gauges, if required, shall be attached for the use of officials. Note of every removal, and also of quantity left, shall be made by the officials and signed by themselves and the manufacturers. The ether may not be used for any other purpose, nor be removed from the factory without the permission of the inspector. A written and signed statement of the quantity of ether on hand must be sent annually to the office of the collector. This quantity shall be regarded as the first importation in the new year. Samples of the liquids in the factory may be demanded by the officials, who may verify the quantity of ether, mixed or unmixed, and compare it with the quantity which should be on hand.

Proposed Free Port at Rotterdam.—Consul Hill, of Amsterdam, on December 21, 1899, writes that in the course of January there will be presented for sale, through Mr. A. Loeb, of the banking house of Mendes, Gans & Co., grounds situated in the immediate neighborhood of Rotterdam, near deep water and railway. Here there can be established a free-port territory, which will present very good prospects and will be in a more favorable position even than the free harbors of Bremen and Hamburg, on account of the geographical position and the lower wages it would be necessary to pay.

Demand for Fish Scales in France.—Consul Covert writes from Lyons, under date of December 27, 1899:

A call has been made at this consulate for fish scales, to be used in the manufacture of artificial pearls and other ornaments by the recently discovered method of a French chemist. The supply is much less than the demand, and it is said that large quantities will be used and a good price paid for them. The scales should be sprinkled with salt as soon as they are removed from the fish and packed in tin cans. Any specimens sent to this consulate will receive careful examination, and the results, with any suggestions that may be made and particulars of prices offered, will be duly reported. It is believed here that the sale of these scales may result in establishing an important business in an article that now has no commercial value.

French Wine Crop of 1899: Correction.—Consul Covert, of Lyons, under date December 28, 1899, writes as follows:

In my report upon the French wine crop of 1899, published in ADVANCE SHEETS No. 614, December 28, 1899 (CONSULAR REPORTS No. 233, February, 1900, p. 151), the annual yield, 47,907,000 hectoliters, as quoted from the Journal Officiel, does not include the product of Corsica, which amounted to 250,000 hectoliters (6,604,250 gallons), or of Algeria, which was 4,648,000 hectoliters (122,786,216 gallons).

Demand for Phosphates in France.—Consul Brittain, of Nantes, under date of January 10, 1900, writes as follows:

M. Albert Brosseau, 4 rue Cambronne, Nantes, wishes to correspond with some of the leading wholesale dealers in phosphates in America; also with parties who handle phosphate made from slag by what is known as the Thomas process. M. Brosseau is an extensive dealer in phosphates.

Land Tax in Kyao-chau.—Under date of Shanghai, November 19, 1899, Consul-General Goodnow transmits the following information, supplied by the acting British consul-general at that port, relative to taxation in Kyao-chau:

The German Government has adopted the system of single tax for Kyao-chau, levying a tax of 6 per cent on land values. Until the first of January, 1902, the value of the land is represented by the sum paid to the Government at the land auction. After this term, a revision of the land values is purposed. Besides this tax, the owner has to give to the Government one-third of the net profit he realizes at a sale of his parcel of land. All improvements made on the estate, including an interest of 6 per cent, is deducted, according to the owner's statement, subject to official control. If a parcel of land does not change its proprietor by sale during twenty-five years, the Government is entitled to levy a tax of one-third of the surplus of value in analogy to the one-third taken at a sale. These proceedings may be repeated after another twenty-five years.

Custom-House at Yao-Chou-Fu.—Minister Conger informed the Department, under date of Peking, November 12, 1899, that, according to advices from the Tsungli Yamên, the custom-house at the new port of Yao-Chou-Fu, in the province of Hunan, was to be opened November 13.

Argentine Tariff for 1900.—The secretary of legation at Buenos Ayres, Mr. François S. Jones, telegraphs, under date of February 3, that in the tariff just passed by Congress there are no changes of importance, except a reduction in the duty on typewriters from 25

per cent to 5 per cent ad valorem. The aforo, or custom-house valuation, has been slightly raised on wheel plows and white pine, and reduced on enameled ironware and yellow pine. The aforo takes effect February 1. Kerosene is taxed the same as last year.

Change of Postal Rates in Paraguay.—Consul Ruffin, of Asuncion, on November 6, 1899, writes concerning the change of postal rates in Paraguay, which took effect November 1, 1899. The new tariff for letters for the United States and European countries is 40 cents Paraguayan money (9.6 cents) per $0\frac{1}{2}$ ounce, instead of 20 cents (4.8 cents).

Emission of Paper Money in Paraguay.—Consul Ruffin, of Asuncion, under date of November 19, 1899, reports that a bill was passed at the extra session of Congress to emit \$5,000,000 paper, and a call was made for bids to print 2,933,000 bills, amounting to \$15,000,000. The bids were to be presented January 3, 1900.

Liquidation of Debt of Salvador.—Consul Jenkins writes from San Salvador, December 20, 1899, that, according to the Diario Oficial, £73,000 (\$355,254) has been paid on the foreign debt of Salvador.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting	Date.	Subject.	Department to which referred.
R. A. Moseley, jr., Singapore.	Nov. 24, 1899	Dairying	Department of Agriculture.
F. D. Hill, Amsterdam.....	Jan. 29, 1900	do	Do.
E. Schneegans, Saigon.....	Dec. 5, 1899	Rice market.....	Do.
Do.....	Nov. 21, 1899	do	Do.
Do.....	Dec. 21, 1899	do	Do.
Do.....	Jan. 4, 1900	do	Do.
W. Schumann, Mainz.....	Jan. 12, 1900	Vital statistics.....	Marine-Hospital Service.
J. C. Higgins, Dundee.....	Jan. 16, 1900	Prison dietaries.....	International Prison Commission.

FOREIGN REPORTS AND PUBLICATIONS.

American Trade in Manchuria: Railways.—A British Foreign Office report (annual series, No. 2369) says:

COTTON GOODS.

The value of the net import of cotton goods into China from foreign countries in 1898 was £11,088,403 (\$53,961,713), of which nearly 10 per cent found its way into Manchuria through the port of Niuchwang, and of this latter a sum of £490,655 (\$2,387,773) is credited to American sheetings (625,982 pieces). Of drills, 367,916 pieces, to the value of £181,495 (\$873,245), were consumed, and 3,380 pieces of jeans, to the value of £1,416 (\$6,891). The chief markets for American manufactured cottons in China are the northern provinces and Manchuria. Why is this so, and why is it that American cottons are superseding English goods in these markets? The answer is, that the heavier makes of goods are in greatest demand in the colder north, that America is our competitor in these makes, and that these American goods are superior to and cheaper than English. The Chinese dealer will not change his usual purchases for new classes of goods; but as soon as equally good and even superior and cheaper goods are brought to his notice, he will not hesitate to change his custom. It is perfectly immaterial to him whether the goods he deals in are manufactured in Great Britain or in the United States of America; and, as a matter of fact, I have asked native wholesale merchants here if they could tell me where the favorite sheetings and drills consumed in Manchuria are manufactured, and they have confessed their entire ignorance of the country of origin, stating at the same time that they merely indent for their purchases by the special brand, or "chop." I am told that the proof of the superiority of the American goods is in the washing; when English goods are washed and the heavy sizing removed they are very inferior to the American article when similarly treated. America is at present a successful rival in the heavier manufactured cottons, and there is nothing to prevent her from entering the lists against us in the higher grades. The setting up of machinery for the purpose is simply a question of time; and if we are to regain the ground which we have already lost and maintain what is left to us, we must manufacture goods equal to and as cheap as those of our rival.

RAILWAYS.

In 1897 I wrote that "the construction of the proposed railway (*i. e.*, by the Chinese Government) from Niuchwang to Kirin would give a great impetus to trade; and its extension southwards to Taliens Bay, just north of Port Arthur, which is open to navigation all the year round, would tend still further to develop the valuable resources of the whole of Manchuria." These words were penned after Russia had obtained permission to join the Trans-Baikal and southern Ussuri sections of the Trans-Siberian Railway by a line through the Heilung-chiang and Kirin provinces, but before the occupation of the south of the Liao-tung Peninsula and the construction of a line from Port Arthur to the Manchurian section of the Trans-Siberian Railway had been mooted. This southern section is now being built under Russian auspices, and it is expected that the rails will be laid from Port Arthur to Moukden by the end of October or beginning of November of the present year. A branch line runs from this port (the terminus is nearly 3 miles from the port) eastward some 17 miles. From Moukden the line will run northward past T'iehling, K'aiyuan, Ch'ang t'u Fu, and Feng-hua-Hsien, and Ch'ang-ch'ien Fu,

and follow the winter midroad to Shuang-ch'eng T'ing and the right bank of the Sungari to the south of Hulan. The eastern section from Vladivostock—which crosses the Manchurian frontier at San-Ch'a-kou and will pass a few miles to the north of Ninguta, go westward to Yi-mien-p'o, and northwest to A-shih-ho, leaving that town on its left—will join the southern section on the south bank of the Sungari. The junction is really effected at a place called Ha-êrh-pin (Harbin), some 6 miles to the south of the river. Railway materials are being landed on the bank of the Sungari, and work is being pushed forward along the eastern section, as well as southward to K'uan ch'êng-tzu. The Sungari has to be bridged near the junction, and the track will then pass Hulan, Tsi-tsi-har, and cross the Hsing-an range and the Argun River to Nerchensk. It is expected that all these lines will be completed in less than four years. The port of Niuchwang is situated on the left bank of the Liao River, and so is the terminus of the Russian or Chinese Eastern Railway, and on the opposite bank of the river and a little to the west of the port is the terminus of the Shan-hai-kuan-Niuchwang Railway, which is financed by the Hongkong and Shanghai banking corporation. The termini of the two railways are about 4 miles apart and well within sight of each other. At the present time rails are laid on the Shan-hai-kuan-Niuchwang line as far as Chin-chou-Fu, and the earthworks from the latter place to this port are practically completed, and it is expected that rails will be laid to Niuchwang and communication opened with Peking by January 1, 1900. Kou-p'ang-tzû, a place 56 miles to the northwest of this port, will be the junction of the extension to Hsin-min-T'ing, a distance of 68 miles. The Ta-ling River, 20 miles north by east of Chin-chou, has to be crossed by a bridge 1,000 yards in length.

The question is being asked here, What effect will these railways have upon the trade of Manchuria and on the port of Niuchwang? To my mind, the answer is that they will bring about an enormous development of trade of Manchuria, provided differential taxation and preferential railway rates are not allowed to strangle its growth. That the railways will afford cheap and speedy transport for the agricultural labor annually required in the interior of Manchuria and tend to a steady settlement of the country and to its consequent prosperity and wealth will not be doubted by anyone acquainted with the conditions under which individuals and whole families at present proceed into the far interior to till, sow, and reap. They will end the painful sight of men, women, and children, footsore and weary, struggling day after day to accomplish twenty of the several hundred miles they have undertaken to complete in search of bread. They will put a stop to much misery and suffering.

Railway and Mining in Tunis.—A British Foreign Office report (No. 2279, annual series) says that the new railway from Sfax to Gafsa was formally inaugurated in the spring of 1899. The concession of the phosphate mines in the neighborhood of Gafsa was granted to a French company on the condition that a railway from the port of Sfax to Gafsa be constructed. The total length of the railway is 244 kilometers (152 miles). The highest point in the railway is at Sened, 157 kilometers (98 miles) from Sfax, which is 480 meters (1,575 feet) above the sea level. Gafsa itself lies at an altitude of 345 meters (1,132 feet). The first 90 kilometers (56 miles) of the line presented no difficulties, the country being flat and level. After that point the country becomes hilly, necessitating many cuttings and the construction of numerous small bridges. The greatest difficulty in the working of the line at present is the scarcity of water.

Up to Zanûna, a distance of 180 kilometers (112 miles), there is an abundant supply for present purposes, though it will probably prove deficient when the line is in thorough working order and when it is estimated that at least five trains will run daily in each direction. At the mines beyond Gafsa, water is very scarce, and at considerable distances from the railway 700 francs (\$135.10) per month are spent for its transport. Owing to the large amount of sulphate of lime in the water, it has been found injurious to the boilers of the engines, and has to be treated chemically at the principal watering stations and then conveyed in trucks to the other stations. The line is not yet entirely completed; up to Mezûna, a distance of 98 kilometers (61 miles), it is firmly constructed; beyond that point it has not yet been properly ballasted, and passengers are allowed to travel by the railway only after signing a document to the effect that the company will not be responsible for any accident that may happen to them. The country is rich in phosphates; besides the mines beyond Gafsa, phosphates have been discovered in the hills south of the railway, at about the seventieth mile. Zinc has been discovered in these hills and is being worked to a small extent, though it has not yet been possible to ascertain whether it exists in any great quantities. The phosphate company has contracted to export a minimum of 250,000 tons of phosphates per year. It is estimated that at least 300,000 tons will be exported, which will necessitate the departure of three steamships per week, the majority of which will sail under the British flag. Although these phosphates may be considered a cheap article, adds the report, the experiments made in the north of Tunis have proved so satisfactory that there is little doubt that the company will derive considerable benefit from the concession, and the importance of the port of Sfax will be greatly increased.

Trade of the French Somali Coast.—The Board of Trade Journal, London, January 11, 1900, has the following:

La Politique Coloniale publishes statistics regarding the commerce of the French Somali Coast for the third quarter of 1899, as follows:

Imports, exclusive of specie.

Country.	Value.	
France.....	£19,756	\$96,143
Aden.....	19,010	92,512
England.....	3,203	15,587
Zeilah-Berberah.....	2,207	10,740
Egypt.....	1,603	7,801
Arabia.....	1,285	6,253
Belgium.....	951	4,628
Other places.....	423	2,059
Total.....	48,438	235,723

France furnished flour, wines, beer, all kinds of silks, and ready-made clothing. England and Aden sent cotton stuffs, bleached and unbleached. France took but a small part in the importation of cotton stuffs—£733 (\$3,567) out of £7,378 (\$35,905). The list of unbleached cotton stuffs includes particularly "aboudjédin," a kind of cotton cloth finding a ready sale in Abyssinia. It is manufactured in the United States and England. The silk stuffs are almost entirely French and are mixed with cottons, satins, Flemish grosgrain silks, and brocades from Lyons. Intended for Abyssinia, they are sold to the Abyssinians down at Djibouti, or sent to Harrar by the importers. The cattle come from Arabia. The quantity—relatively large—of iron and enameled goods from Belgium was ordered by the Emperor of Ethiopia, and included iron tables, large enameled dishes, and kettles.

Exports according to country of destination.

Country.	Value.	
France.....	£3,543	\$17,242
Egypt.....	386	1,878
Zeilah.....	237	1,153
Aden.....	4,933	24,006
Yemen.....	838	4,078
Cochin China.....	73	355
Various.....	211	1,027
Total.....	10,221	49,739
Abyssinia.....	8,932	43,468
Grand total.....	19,153	93,207

Trade of the Italian Somali Coast.—From the Bollettino degli Affari Esteri, Rome, November, 1899, the following statistics are taken:

The commercial movement of Benadir for the fiscal year 1898 amounted to 645,-133 thalers (\$277,400) in imports and 790,646 thalers (\$339,900) in exports. The imports for the preceding year were valued at 464,032 thalers (\$199,500) and the exports at 484,273 thalers (\$208,200); showing an increase of 181,101 thalers (\$77,-900) in the imports and 306,473 thalers (\$131,700) in the exports. The following tables give the chief imports and exports:

Imports.

Articles.	Value.	
Cotton:	<i>Thalers.</i>	
American.....	257,412	\$110,500
Turkish.....	69,606	29,600
Other.....	55,486	23,600
Thread.....	23,396	9,900
Coffee.....	55,661	23,600
Sugar and molasses.....	39,136	16,700
Tobacco.....	28,690	12,000
Petroleum.....	12,693	5,100
Rice.....	11,488	4,700
Dates.....	10,343	4,300
Wood and odorous gums.....	5,104	2,100
Sacks and receptacles for goods.....	10,886	4,400
Groceries, soap, salt, etc.....	14,643	6,000

NOTE.—The equivalents in United States currency are in round numbers.

Exports.

Articles.	Value.	
	<i>Thalers.</i>	
Cereals	247,809	\$106,200
Live animals.....	107,757	46,000
Skins.....	101,943	43,400
Butter.....	82,271	35,300
Sesame and oil of.....	25,840	10,800
Ivory	25,803	10,800
Fat of camels.....	11,775	4,700
Fish, salted and dried.....	3,333	1,400

The above figures are taken from the customs statistics of the six seaports of Benadir, from Adale, the most northern port, to Gumbo, the most southern, a distance of about 300 marine miles on the Arabian Sea. Benadir is now under the administration of the Italian Government.

Russian Chamber of Commerce in Paris.—The Centralstelle fuer vorbereitung von Handelsvertraegen (Berlin, January 6, 1900) reports that a Russian chamber of commerce is about to be established in Paris. The chief imports of Russia from France are wine, copper, and wool, and the principal exports to France from Russia consist of grain, flax, and wood.

New Railways in Spain.—The Board of Trade Journal, London, January 18, 1900, quotes from the Madrid Gazette royal orders, one granting a concession for ninety-nine years, without subvention, to the Robia and Valmateda Railway Company (Bilbao district) to build a medium-gauge line from Valmateda to Torrosa; and another authorizing a concession for ninety-nine years, also without subvention, to the Bilbao and Portugalete Railway Company for a standard-gauge branch from a point of the Cantalogas and Olareaga line to Mount Maravilla.

Salt Industry in Japan.—According to a recent report of the German consul-general in Yokohama,* the production of salt in Japan is carried on mainly on the seacoast, where it is collected from the sea by means of salt pans. Rock salt and brine are not found in Japan in quantities suitable for working. The report continues:

The quantity of salt produced in Japan in 1896 was 25,965,719 bushels, of a value of £825,567 (\$4,017,922). The salt is not of very good quality, and is used in salting fish, etc., and in preparing soy sauce, an article of which large quantities are

*Quoted in the Board of Trade Journal, London, January 18, 1900.

consumed; but salt has to be kept for a year to eighteen months before it can be used for this purpose.

The imports of raw salt were small up to 1896, but have since increased, the value being: In 1896, £5,800 (\$28,226); in 1897, £11,700 (\$58,938); and in 1898, £13,500 (\$65,698). Germany and China are the chief countries exporting salt to Japan, and German salt is rapidly gaining ground, owing, it is said, to its better quality.

The Japanese Minister of Agriculture and Trade recently appointed a committee to investigate the best means of protecting the Japanese salt industry against foreign competition. Among other proposals, this committee suggested the establishment of a Government experimental salt-refining laboratory and the increase of the import duty on salt.

Russian Commercial Agency in Persia.—The following is taken from the Board of Trade Journal, London, January 11, 1900:

According to the Bulletin Commercial, the Persian Loan Bank, which is a Russian official institution making loans on security in Teheran, or, in other words, a pawn office, has just extended the sphere of its operations by adding an import agency to its offices.

Already, a series of articles of Muscovite production, such as flour, oats, preserves, salted and smoked fish, pork, sweetmeats, perfumes, cloths, etc., is to be found there. A second assortment of merchandise yet more varied is promised. In addition, the management is preparing a permanent exhibition of the novelties of Russian industry, especially cloths, cotton checks, woollen stuffs, silks, etc. It will be a veritable museum of samples, where those interested can give orders which, it is promised, will be executed with the greatest care.

The new establishment has already a considerable amount of capital at its disposal and has a large staff of persons well acquainted with the ways and customs of the country. Everything seems favorable to a successful commencement.

Coal Trade of British India.—The Board of Trade Journal, London, November, 1899, has the following paragraphs:

One of the most remarkable features of the history of Indian trade in recent years has been the rapid increase in coal production and export. The official figures for 1898 show 174 coal mines in operation, of which 158 were situated in Bengal. The total output for all India rose from 1,388,487 tons in 1886 to 4,604,930 tons in 1898. The industry gives employment to some 63,000 persons, and the capital invested in it by joint-stock companies amounts to something like £1,000,000 (\$4,866,500); while there is also a large, though unknown, investment of capital by private mine owners and by the state. The imports of coal, coke, and patent fuel in 1898-99 amounted to 359,010 tons, the average value being more than six times that of Indian coal. There are now about 12¾ tons of Indian coal produced for every ton imported, and the proportion of Indian coal grows larger every year.

The Pioneer Mail, in an interesting article on the export of Indian coal and the best means of assisting what is rapidly becoming an important branch of the export trade of India, states that five years ago Bengal, where about four-fifths of the Indian coal is mined, exported by sea to other provinces (Bombay, Madras, and Burma) about 180,000 tons and to foreign countries (Ceylon, the Straits Settlements, Mauritius, Aden, and elsewhere) about 55,000 tons; whereas the corresponding figures last year had risen to about 957,000 tons and 327,000 tons.

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Full directions for binding the Consular Reports are given in No. 131, page 663.

PUBLICATIONS OF THE BUREAU OF FOREIGN COMMERCE.*

The publications of the Bureau of Foreign Commerce, Department of State, are:

I.—COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

II.—CONSULAR REPORTS, issued monthly, and containing miscellaneous reports from diplomatic and consular officers.

III.—ADVANCE SHEETS, CONSULAR REPORTS, issued daily; except Sundays and legal holidays, for the convenience of the newspaper press commercial and manufacturing organizations, etc.

IV.—EXPORTS DECLARED FOR THE UNITED STATES, issued quarterly, and containing the declared values of exports from the various consular districts to the United States for the preceding three months.

V.—SPECIAL CONSULAR REPORTS, containing series of reports from consular officers on particular subjects, made in pursuance to instructions from the Department.

Following are the special publications issued by the Bureau prior to 1890:

Labor in Europe, 1878, one volume; Labor in Foreign Countries, 1884, three volumes; Commerce of the World and the Share of the United States Therein, 1879; Commerce of the World and the Share of the United States Therein, 1880-81; Declared Exports for the United States, First and Second Quarters, 1883; Declared Exports for the United States, Third and Fourth Quarters, 1883; Cholera in Europe in 1884, 1885; Trade Guilds of Europe, 1885; The Licorice Plant, 1885; Forestry in Europe, 1887; Emigration and Immigration, 1885-86 (a portion of this work was published as CONSULAR REPORTS No. 76, for the month of April, 1887); Rice Pounding in Europe, 1887; Sugar of Milk, 1887; Wool Scouring in Belgium, 1887; Cattle and Dairy Farming in Foreign Countries, 1888 (issued first in one volume, afterwards in two volumes); Technical Education in Europe, 1888; Tariffs of Central America and the British West Indies, 1890.

The editions of all these publications except Tariffs in Central America, etc., are exhausted and the Department is, therefore, unable to supply copies.

In 1890, the Department decided to publish reports on special subjects in separate form, to be entitled SPECIAL CONSULAR REPORTS. There are now the following SPECIAL CONSULAR REPORTS:

Vol. 1 (1890).—Cotton Textiles in Foreign Countries, Flies in Spanish America, Carpet Manufacture in Foreign Countries, Malt and Beer in Spanish America, and Fruit Culture in Foreign Countries.

Vol. 2 (1890 and 1891).—Refrigerators and Food Preservation in Foreign Countries, European Emigration, Olive Culture in the Alpes Maritimes, and Beet-Sugar Industry and Flax Cultivation in Foreign Countries.

Vol. 3 (1891).—Streets and Highways in Foreign Countries. (New edition, 1897.)

Vol. 4 (1891).—Port Regulations in Foreign Countries.

Vol. 5 (1891).—Canals and Irrigation in Foreign Countries. (New edition, 1898.)

Vol. 6 (1891 and 1892).—Coal and Coal Consumption in Spanish America, Gas in Foreign Countries, and India Rubber.

Vol. 7 (1892).—The Slave Trade in Foreign Countries and Tariffs of Foreign Countries.

Vol. 8 (1892).—Fire and Building Regulations in Foreign Countries.

* Formerly Bureau of Statistics. Name changed to Bureau of Foreign Commerce by order of the Secretary of State, July 1, 1897.

Vol. 9 (1892 and 1893).—Australian Sheep and Wool and Vagrancy and Public Charities in Foreign Countries.

Vol. 10 (1894).—Lead and Zinc Mining in Foreign Countries and Extension of Markets for American Flour. (New edition, 1897.)

Vol. 11 (1894).—American Lumber in Foreign Markets. (New edition, 1897.)

Vol. 12 (1895).—Highways of Commerce. (New edition, 1899.)

Vol. 13 (1896 and 1897).—Money and Prices in Foreign Countries.

Vol. 14 (1898).—The Drug Trade in Foreign Countries.

Vol. 15 (1898).—Part I. Soap Trade in Foreign Countries; Screws, Nuts, and Bolts in Foreign Countries; Argols in Europe, Rabbits and Rabbit Furs in Europe, and Cultivation of Ramie in Foreign Countries. Part II. Sericulture and Silk Reeling and Cultivation of the English Walnut.

Vol. 16 (1899).—Tariffs of Foreign Countries. Part I. Europe. Part II. America. Part III. Asia. Part IV. Africa. Part V. Australasia and Polynesia. (Parts III, IV, and V not yet published.)

Vol. 17 (1899).—Disposal of Sewage and Garbage in Foreign Countries; Foreign Trade in Coal Tar and By-Products.

Vol. 18 (1900).—Merchant Marine of Foreign Countries.

Of these SPECIAL CONSULAR REPORTS, Australian Sheep and Wool, Cotton Textiles in Foreign Countries; Disposal of Sewage, etc.; Files in Spanish America, Fire and Building Regulations, Gas in Foreign Countries, India Rubber, Lead and Zinc Mining, Malt and Beer in Spanish America, Port Regulations, Refrigerators and Food Preservation, Soap, etc.; Sericulture, etc.; Vagrancy, etc., are exhausted, and no copies can be supplied by the Department.

Of the monthly CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications of the Bureau available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Bureau will be grateful for the return of any copies of the monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, the Department will forward franking labels to be used in lieu of postage in the United States, Canada, the Hawaiian Islands, and Mexico.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

In order to prevent confusion with other Department bureaus, all communications relating to consular reports should be carefully addressed, "Chief, Bureau of Foreign Commerce, Department of State, Washington, U. S. A."

VALUES OF FOREIGN COINS AND CURRENCIES.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

The fact that the market exchange value of foreign coins differs in many instances from that given by the United States Treasury has been repeatedly called to the attention of the Bureau of Foreign Commerce. An explanation of the basis of the quarterly valuations was asked from the United States Director of the Mint, and under date of February 7, 1898, Mr. R. E. Preston makes the following statement:

"When a country has the single gold standard, the value of its standard coins is estimated to be that of the number of grains fine of gold in them, 480 grains being reckoned equivalent to \$20.67 in United States gold, and a smaller number of grains in proportion. When a country has the double standard, but keeps its full legal-tender silver coins at par with gold, the coins of both gold and silver are calculated on the basis of the gold value.

"The value of the standard coins of countries with the single silver standard is calculated to be that of the average market value of the pure metal they contained during the three months preceding the date of the proclamation of their value in United States gold by the Secretary of the Treasury. The value of the gold coins of silver-standard countries is calculated at that of the pure gold they contain, just as if they had the single gold standard.

"These valuations are used in estimating the values of all foreign merchandise exported to the United States. The value of the Indian rupee, although calculated according to law at the value of the pure metal contained therein, has a commercial value above the value of the silver bullion; consequently the value for customs purposes is determined in each case by the consular certificates attached to the invoice of exports from that country to the United States."

The following statements, running from January 1, 1874, to January 1, 1900, have been prepared to assist in computing the values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account

that the ruble of Russia, for instance, fluctuated from 77.17 cents in 1874 to 37.4 cents in April, 1897, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, 1882, and 1891-95 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange."

Countries.	Standard.	Monetary unit.	Value in U.S. gold.	Coins.
Argentine Republic*.	Gold and silver..	Peso.....	\$0.96,5	Gold—Argentine (\$4.82,4) and ¼ Argentine; silver—peso and divisions.
Austria-Hungary†.....	Gold.....	Crown.....	.20,3	Gold—20 crowns (\$4.05,2) and 10 crowns.
Belgium.....	Gold and silver..	Franc.....	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil.....	Gold.....	Milreis.....	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do.....	Dollar.....	1.00	
British Honduras.....	do.....	do.....	1.00	
Chile.....	do.....	Peso.....	.36,5	Gold—escudo (\$1.25), doubloon (\$3.65), and condor (\$7.30); silver—peso and divisions.
Costa Rica.....	do.....	Colon.....	.46,5	Gold—2, 5, 10, and 20 colons; silver—5, 10, 25, and 50 centesimos.
Cuba.....	Gold and silver..	do.....	.92,6	Gold—doubloon (\$5.01,7); silver—peso (60 cents).
Denmark.....	Gold.....	Crown.....	.26,8	Gold—10 and 20 crowns.
Egypt.....	do.....	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	do.....	Mark.....	.19,3	Gold—10 and 20 marks (\$1.93 and \$3.85,0).
France.....	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany.....	Gold.....	Mark.....	.23,8	Gold—5, 10, and 20 marks.
Great Britain.....	do.....	Pound sterling..	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver..	Drachma.....	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	do.....	Gourde.....	.96,5	Silver—gourde.
Italy.....	do.....	Lira.....	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan‡.....	Gold.....	Yen.....	.49,8	Gold—1, 2, 5, 10, and 20 yen.
Liberia.....	do.....	Dollar.....	1.00	
Netherlands§.....	Gold and silver..	Florin.....	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland.....	Gold.....	Dollar.....	1.01,4	Gold—\$2 (\$2.02,7).
Portugal.....	do.....	Milreis.....	1.08	Gold—1, 2, 5, and 10 milreis.
Russia||.....	.....do.....	Ruble.....	.51,5	Gold—imperial (\$7.718) and ½ imperial (\$3.80); silver—¼, ½, and 1 ruble.
Spain.....	Gold and silver..	Peseta.....	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway.	Gold.....	Crown.....	.26,8	Gold—10 and 20 crowns.
Switzerland.....	Gold and silver..	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey.....	Gold.....	Piaster.....	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Uruguay.....	Gold.....	Peso.....	1.03,4	Gold—peso; silver—peso and divisions.
Venezuela.....	Gold and silver..	Bolivar.....	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875, the gold standard prevailed.

† The gold standard was adopted October 1, 1892. (See CONSULAR REPORTS No. 147, p. 623.) Values are still, however, frequently expressed in the florin or gulden, which is worth 2 crowns or 40.6 cents.

‡ Gold standard adopted October 1, 1897. (See CONSULAR REPORTS No. 201, p. 259.)

§ See note to table of fluctuating currencies.

|| For an account of the adoption of the gold standard, see Review of the World's Commerce, 1896-97, p. 234.

B.—Countries with fluctuating currencies, 1874-1890.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1890; bolivi- ano there- after.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6		
China.....	Silver.....	Halkwan tael.	1.61	1.61				
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).			4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupee.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	Gold.....	Yen.....	.99,7	.99,7	.99,7	.99,7		
	Silver.....						.87,6	.86,9
Mexico.....	do.....	Dollar.....	1.04,7‡	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡.....	Gold and Silver.	Florin.....	.40,5	.38,5	.38,5	.40,2		
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; bolivi- ano there- after.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....				.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.94,3
India.....	Silver.....	Rupee.....	.37,8	.35,7	.34,6	.32,2	.32,3	.40,4
Japan.....	Gold.....	Yen.....			.99,7	.99,7	.99,7	.99,7
	Silver.....		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico.....	do.....	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (see CONSULAR REPORTS No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies.

Countries.	Monetary unit.	1897.				1898.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.47,4	\$0.46,8	\$0.44,3	\$0.41,2	\$0.42,4	\$0.40,9	\$0.41,8	\$0.43,6
Central Amer-ica.	Silver peso.....	.47,4	.46,5	.44,3	.41,2	.41,4	.40,9	.41,8	.43,6
	Amoy tael.....	.76,7	.75,7	.71,7	.66,4	.68,5	.66,2	.67,6	.70,6
	Canton tael.....	.76,5	.75,5	.71,5	.66,4	.68,3	.66	.67,4	.70,4
	Chefoo tael.....	.73,3	.72,4	.68,6	.63,7	.65,5	.63,3	.64,6	.67,5
	Chinkiang tael.....	.74,9	.73,9	.70	.65,1	.66,9	.64,6	.65	.69
	Fuchau tael.....	.70,9	.70	.66,3	.61,6	.63,4	.61,2	.62,5	.65,3
	Haikwan tael.....	.78	.77	.73,1	.67,8	.69,7	.67,3	.68,8	.71,8
China.....	Hankau tael.....	.71,7	.70,8	.67,1	.62,3	.64,1	.61,9	.63,2	.66
	Ningpo tael.....	.73,7	.72,8	.68,9	.64	.64,3	.63	.65	.67,9
	Niuchwang tael.....	.71,9	.71	.67,2	.62,5	.65,9	.62	.63,4	.66,2
	Shanghai tael.....	.70	.69,1	.65,5	.60,8	.62,6	.60,4	.61,7	.64,5
	Swatow tael.....	.70,8	.69,9	.66,2	.61,5	.63,3	.61,1	.62,4	.65,2
	Takao tael.....	.77,4	.76,2	.72,2	.67	.66	.66,6	.68	.71
	Tientsin tael.....	.74,3	.73,4	.69,5	.64,6	.66,4	.64,1	.65,5	.68,4
Colombia.....	Silver peso.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Ecuador.....	do.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
India*	Silver rupee.....	.22,5	.22,2	.21,1	.19,6	.20,1	.19,1	.19,9	.20,7
Japan.....	Silver yen.....	.51,1	.50,5						
Mexico.....	Silver dollar.....	.51,5	.50,8	.48,2	.44,6	.46	.44,4	.45,4	.47,4
Persia.....	Silver kran.....	.08,7	.08,6	.08,2	.07,6	.07,8	.07,5	.07,7	.08
Peru.....	Silver sol.....	.47,4	.46,8	.44,3	.41,2	.42,4	.40,9	.41,8	.43,6
Russia.....	Silver ruble.....	.37,9	.37,4						

Countries.	Monetary unit.	1899.				1900.
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.
Bolivia.....	Silver boliviano.....	\$0.43,9	\$0.43,4	\$0.44,3	\$0.43,6	\$0.42,7
Central America.....	Silver peso.....	.43,9	.43,4	.44,3	.43,6	.42,7
	Amoy tael.....	.71	.70,2	.71,6	.70,5	.69,1
	Canton tael.....	.70,8	.70	.71,1	.70,3	.68,9
	Chefoo tael.....	.67,9	.67,2	.68,4	.67,4	.66,1
	Chinkiang tael.....	.69,3	.68,6	.69,9	.68,9	.67,5
	Fuchau tael.....	.65,6	.65	.66,2	.65,2	.64
	Haikwan tael.....	.72,2	.71,4	.72,8	.71,8	.70,3
China.....	Hankau tael.....	.66,4	.65,7	.67	.66	.64,7
	Ningpo tael.....	.68,2	.67,5	.68,8	.67,8	.66,5
	Niuchwang tael.....	.66,5	.65,9	.67,1	.66,1	.64,8
	Shanghai tael.....	.64,8	.64,1	.65,4	.64,4	.63,1
	Swatow tael.....	.65,5	.64,9	.66,1	.65,1	.63,9
	Takao tael.....	.71,4	.70,7	.72	.71	.69,6
	Tientsin tael.....	.68,8	.68	.69,4	.68,3	.67
Colombia.....	Silver peso.....	.43,9	.43,4	.44,3	.43,6	.42,7
Ecuador.....	do.....	.43,9	.43,4	.44,3	.43,6	.42,7
India *	Silver rupee.....	.20,8	.20,6	.21	.20,7	.20,3
Mexico.....	Silver dollar.....	.47,7	.47,2	.48,1	.47,4	.46,4
Persia.....	Silver kran.....	.08,1	.08	.08,2	.08	.07,9
Peru.....	Silver sol.....	.43,9	.43,4	.44,3	.43,6	.42,7

* The commercial value of the rupee to be determined by consular certificate.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalents.
Almude.....	Portugal.....	4.422 gallons.
Ardeb.....	Egypt.....	7.6907 bushels.
Are.....	Metric.....	0.02471 acre.
Arobe.....	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine.....	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovets.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains
Bouw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar.....	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333 ¹ / ₃ (1 ¹ / ₃) pounds.
Do *.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, and Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner.....	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.

* More frequently called "kin." Among merchants in the treaty ports it equals 1.33¹/₃ pounds avoirdupois.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Dessiatine.....	Russia.....	2.6907 acres.
Do.....	Spain.....	1.599 bushels.
Drachme.....	Greece.....	Half ounce.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1.5745 bushels.
Do.....	Chile.....	2.575 bushels.
Do.....	Cuba.....	1.599 bushels.
Do.....	Mexico.....	1.54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do.....	Uruguay (double).....	7.776 bushels.
Do.....	Uruguay (single).....	3.888 bushels.
Do.....	Venezuela.....	1.599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddán.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2.5096 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	do.....	2.471 acres.
Hectoliter:		
Dry.....	do.....	2.838 bushels.
Liquid.....	do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	6 feet.
Kilogram (kilo).....	Metric.....	2.2046 pounds.
Kilometer.....	do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Koku.....	Japan.....	4.9629 bushels.
Korree.....	Russia.....	3.5 bushels.
Kwan.....	Japan.....	8.28 pounds.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	11¾ bushels.
Do.....	Spain (salt).....	4,760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2,115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Gulana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Load.....	England (timber).....	Square, 50 cubic feet; unhewn, 40 cubic feet; 1 inch planks, 600 super- ficial feet.
Manzana.....	Costa Rica.....	1½ acres.
Do.....	Nicaragua and Salvador.....	1.727 acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles.
Do.....	Denmark (geographical).....	4.61 miles.
Milla.....	Nicaragua and Honduras.....	1.1403 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¼ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castile.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Pund (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¼ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	0.02451 acres.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	11.9305 inches.
Sho.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (see cua- dra).
Suñ.....	Japan.....	1.193 inches.
Tael.....	Cochin China.....	590.75 grains (troy)
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tsubo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalents.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914117 yard.
Do.....	Central America.....	32.87 inches.
Do.....	Chile and Peru.....	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Vergees.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vlocka.....	Russian Poland.....	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measures.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.417 gallons.
 Kiloliter (1,000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.
 Decameter (10 meters) equals 393.7 inches.
 Hectometer (100 meters) equals 328 feet 1 inch.
 Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
 Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
 Are (100 square meters) equals 119.6 square yards.
 Hectare (10,000 square meters) equals 2.471 acres.

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DEMAND FOR AMERICAN COAL IN FRANCE.

Continuing my several reports* on the introduction of American coal into the French market, I wish to offer a few observations concerning the prospect of permanently supplying this trade, thus replying to a number of correspondents. When I first suggested, about a year ago, that American coal might find buyers in the Mediterranean, an eminent authority on such subjects in the United States declared that it would be quite impossible to compete with Cardiff; yet to-day, as a matter of fact, something like 60,000 tons of Pocahontas coal are coming into the Mediterranean, and judges of prevailing conditions think that American coal may continue to arrive for at least a year, there being no likelihood that normal prices will prevail within that time.

I have never declared that American coal could compete evenly in this market, but I have pointed out more or less temporary conditions during the continuance of which profitable sales might be made. Such conditions now exist more strikingly than ever. Coal sells readily at any price, and large American sales have been made in spite of the fact that the very causes at work in Cardiff have also brought on high prices in the United States. Whether our coal, having found its way into Marseilles for the first time in our commercial history, can maintain its position, is a question worth the study of our economists. The coal now en route from Newport

* See CONSULAR REPORTS Nos. 221, 223, 224, and 234 (February, April, and May, 1899, and March, 1900), and ADVANCE SHEETS Nos. 292, 336, 394, and 648.

News will pay 15s. (\$3.65) freight to Marseilles, while the Cardiff rate to Marseilles is about 10s. (\$2.43). With coal difficult to get in England at any price, Americans can easily sell here at a profit; but it is evident that in ordinary times the low price of American coal delivered at the seaboard is such that no substantial reduction can be expected, and means must be found to approximate the rates for freight between Marseilles and Cardiff.

The advantage of Cardiff lies in the fact that steamers reach England loaded with importations and take an outward cargo of coal on very elastic terms. In the United States, on the other hand, ships arrive in ballast very frequently, anticipating a profitable outward cargo. If, in the course of time, cargoes of freight can be directed to the United States from Old World ports, thus giving to shipowners a double haul, we can look for such changes in rates as will enable us to continue in the Mediterranean coal trade under all circumstances. In the meantime, we have in our favor a steady decrease in the European coal supply and a steady increase in our own production. So important is the shortage of continental coal and so nearly is the British consumption equal to domestic requirements that it may be seriously questioned whether England can long continue to supply the Old World with coal, even after present pressure is removed. Thoughtful persons look to the future to develop the use of petroleum as a fuel, and in the Caspian Sea most steamers are now being operated with oil. I have heard it intimated that capitalists, aided by the Rothschilds, are now projecting the establishment of oil depots in the seaport cities of the world, contemplating a revolution of this character and the creation of a Russian monopoly in the sale of oil for marine fuel.

For the moment, however, the question is where to get coal, and not its price. When coal at Cardiff passes 10s. 6d. (\$2.55), the situation is always deemed serious. That price has not been known for months, and, as the miners are paid on a sliding scale, themselves securing a liberal share of the present advance, their disposition is to work as few days in the week as possible, and thus, by encouraging the scarcity in the supply, sustain the market. A British coal dealer tells me that three and four days' work per week is about all that the owners now look for from the miners. Contracts made last year for 1900 delivery in Marseilles were fixed at 25s. (\$6.08), but the market price in this city has long been higher, and contract vessels can only obtain needed supplies at the contract price, so low is the stock. Coal men will read with interest the following range of Marseilles prices, at which contracts have been taken and Welsh coal supplied free on board into bunkers of steamers in this port, prices named not including trimming:

For delivery during—		Price.	
		s. d.	
1887		21 0	\$5.11
1888		20 0	4.87
1889		22 6	5.47
1890		24 0	5.84
		25 0	6.08
1891		23 0	5.59
1892		22 0	5.35
1893		19 0	4.62
1894		21 0	5.11
1895		18 6	4.50
1896		16 6	4.01
1897		16 6	4.01
1898		18 6	4.50
1899		22 9	5.53
		25 6	6.20
1900		25 0	6.08

The following letter from Worms & Co. minimizes the amount of American coal ordered thus far, this being generally placed at 60,000 tons:

MARSEILLES, *January 16, 1900.*

ROBERT P. SKINNER, Esq.,

Consul of the United States of America, Marseilles.

SIR: In continuation of our letter of yesterday and in reply to yours of the 13th, we beg to state that the only operation in American coal thus far is a cargo of 4,500 tons which we have now on the way by the steamer *Inca*. If, as we fully anticipate, the result of this trial is satisfactory, we expect our imports of American coal will become regular and on a large scale, certainly as long as the present dearth of fuel and the present famine prices prevail in England and on the Continent, and possibly after the markets have returned to a more normal condition; but, as to the latter, we are unable to speak with any degree of certainty. It may interest you to know that rather considerable shipments of American coal are now being made to the West Indies, South America, Las Palmas, Lisbon, Barcelona, Genoa, and some few other Mediterranean ports, and we are informed by our head office in Paris that they are now endeavoring to arrange some shipments to the French channel and Atlantic ports.

Yours faithfully,

WORMS & Co.

A French writer in the *Semaphore*, the leading commercial paper of the city, discusses the question in this manner:

In spite of the increase in the production of domestic coal, the increase in consumption has been greater. In 1897, the production was 30,797,629 tons and the consumption 41,841,000 tons, leaving a margin of about 25 per cent to be supplied from abroad. England furnished France with 5,697,000 tons in 1897 and 5,713,000 tons in 1898. The production of coal in England amounts to 202,000,000 tons annually; but the domestic consumption there is on the increase, and, in spite of the enormous production, the quantity exported in 1898 was only 36,546,152 tons. These exportations are divided between France, Germany, Italy, Spain, Sweden, Russia, Egypt, Denmark, Norway, Brazil, and other countries. The situation is such that it is out of the question to supply our national deficit in other European

markets when Great Britain fails us. The moment is therefore opportune to seek a remedy for a grave condition, in order that we may not be taken unawares.

Happily, Great Britain has not a monopoly of the coal trade. The United States of America is to-day producing 197,000,000 tons annually, and the American mines can compete in price with those of England. It is in that country that we must seek the means to combat the crisis produced by the increase in the cost of British coal. The Statist, a British journal, foresees this eventuality and declares: "An attentive examination of the coal resources of the United States proves to us that, in view of the exceptional facilities, the abundance, and the reasonable prices of that country, and the ease and rapidity with which its coal can be put in the European markets, America will be in the near future our most active competitor for the coal trade of the world."

The American output has increased from 103,000,000 tons in 1883 to 197,000,000 tons in 1898, while the British production has grown only from 120,000,000 tons to 200,000,000 tons in the last twenty-five years. Furthermore, the average value per ton of American coal at the pit has decreased in recent years from 7.80 francs (\$1.50) to 5.90 francs (\$1.13).

If England is about to relinquish first place to the United States as a producer of coal, France has nothing to lose by the change. We feel sensibly at this moment the inconvenience that the preponderance of Great Britain in the production of coal occasions us. If the English market should become inaccessible for any reason, it is not to Germany that we could address ourselves, as Germany, in spite of her own production of 100,000,000 tons, is herself dependent on Great Britain for about 5,000,000 tons. It is to the United States that we must turn to find in the resources of that country the means to disengage ourselves from the inconveniences which might result to us in consequence of the British monopoly.

ROBERT P. SKINNER,

MARSEILLES, *January 17, 1900.*

Consul.

Consul Brittain writes from Nantes, January 10, 1900, to a similar effect. He says:

Considerable inquiry is being made in this city regarding the prices and quality of American coal. During the past year coal has steadily advanced, first, as a result of the strike in the Welsh mines and, later, on account of advanced transportation rates and the war in South Africa. Cardiff coal, such as is used for fuel, now retails at 54 francs (\$10.42) per ton. Anthracite coal costs 56 francs (\$10.80) per ton. English coal, which makes much more smoke than the Cardiff, sells for about 6 francs (\$1.16) per ton less. Coal bought in large quantities for manufacturing purposes is, of course, cheaper; but there is a general complaint against the high prices. Bituminous coal now costs about 16s. (\$3.89) at the Welsh mines.

Recently, three cargoes of American cannel coal were purchased for this port. The coal comes from Virginia, and has been sold to the State Railroad Company. It is used in manufacturing gas to illuminate their cars, and it is claimed that the coal yields a large

percentage of gas. Cannel coal is sometimes mixed with the bituminous in the manufacture of gas for street illumination, as it adds to the brilliancy of the light. The coal above referred to was purchased through parties in London and costs, delivered in Nantes, from 55 to 60 francs (\$10.62 to \$11.58) per ton.

The large manufacturing industries located here make the market well worth investigating. Railroad and water transportation facilities are excellent. The largest vessels may enter the harbor at the mouth of the Loire, and vessels of 4,000 tons can bring their cargoes to Nantes, where they may be discharged directly into the cars of two of the leading railroads of France. Last year the imports of coal entered at St. Nazaire and Nantes, the ports of the Loire, amounted to 1,077,359 tons.

Albert Brosseau, of No. 4 rue Cambronne, Nantes, is anxious to correspond directly with some of the largest producers in the United States of cannel, bituminous, and anthracite coal. I also give the names of some of the leading coal importers:

Société Générale de Houilles Agglomérés, No. 8 Quai Brancas.

Compagnie des Charbons et Briquettes, No. 3 place de la Petite-Hollande.

H. Boutin, Latour-d'Auvergne, No. 35.

Powell-Duffryn, rue J. Jacques-Rousseau, No. 6.

Champenois, Pont Rousseau.

Before making purchases, these parties would no doubt wish to have samples and tests of American coal.

SCARCITY OF COAL IN ITALY.

Ambassador Draper transmits from Rome, under date of January 11, 1900, translation of an article which appeared in *L'Italie* of even date, as follows:

The increase in the price of coal in England threatens to have serious consequences in Italy. It is known that English dealers have taken advantage of the present war to maintain and increase the price of coal, which has now become even in England a luxury and has reached in certain towns the price of 45 francs (\$8.69) per ton.

Moreover, it is known that means of transport are becoming insufficient, the English Government having hired a large number of boats belonging to companies and to private individuals. The result of it is that coal may very soon reach the price of 50 francs (\$9.65) per ton in Genoa and 60 francs (\$11.58) in Milan. We are to-day informed that, owing to the lack of coal, eight industrial establishments of Bovisa may be obliged to shut down. Thousands of workmen would thus be thrown out of work. The proprietors of these establishments have requested Signor Lacava (Minister of Public Works) to secure the prompt assistance of the

Government at a time when, owing to the industrial revival witnessed in Italy, a cessation of work would have disastrous consequences.

We understand that the Minister of Public Works is studying the best means to prevent such a crisis and to insure public enterprises and at the same time assist private ones.

The ambassador adds:

The situation, I think, is worthy the attention of coal-mining enterprises in the United States. Italy depends mainly upon England for coal, and the price to the consumer is always high, even in times of peace; now, it has gone up enormously. In view of these facts—the Italian high prices, the low cost per ton of American coal at the seaboard, and the ocean freight rates—it appears to me that a large margin of profit is offered to American coal exporters.

I may add that some exporters in England deem it wise, when they fill an order for Italy, to insist upon payment upon delivery of invoices; otherwise, vexatious objections are apt to be made, and the cargo may be disposed of at a disadvantage.

EXPORT OF AMERICAN COAL TO GERMANY.

Since my previous report on this subject* appeared, several inquiries have reached me from American coal mining and exporting companies, asking for addresses of German coal dealers and industrial works which are large consumers of this staple. I have had interviews with some of these, and learn as follows:

There is a scarcity of and great demand for coal and coke, not only in Germany, but also in all other continental countries, including the manufacturing districts of Russia. This amounts almost to a crisis. Several industrial establishments in Cologne, owing to the want of coal, were lately obliged to stop work; one of these employed over 900 hands, who now are idle. The scarcity in coke is most severely felt, and the iron and steel establishments, which paid 16 marks (\$3.80) per metric ton (2,204.6 pounds) this year on contract, must pay for additional requirements—to be satisfied in the open market—42 marks (\$9.99) per ton.

Dealers and consumers would be glad to supply their wants from outside sources, but nearly all are bound by their contracts with the German coal syndicate of the Ruhr district not to use any foreign coal or coke. The penalties of the contract covering this stipulation are heavy; besides, if it were infringed, the syndicate, which has watchers employed at the ports of arrival and railroad stations to report the receipt of coal, would decline to fill existing contracts for

*See ADVANCE SHEETS No. 600 (December 11, 1899); CONSULAR REPORTS No. 333 (February, 1900).

delivery to anyone who gets supplies from mining companies not members of the combination.

There appears to be great indignation among consumers and dealers because of the arbitrary and exacting course of the German coal trust and a strong desire to escape from the present situation. But exports of American coal to Europe can be effectually inaugurated and gain permanent footing only if organized on a large scale. Trade can not be done by opening correspondence with dealers who are dependent on the coal trust. Even if the latter were to shut an eye to the purchase of a few thousand tons of coal, when it can not fill the demand, it could stop the trade at any time.

The Rhine Steamship Transportation Company (William Egan & Co.), Rotterdam and Frankfort, which has 18 steamers, is in favor of introducing American coal, and I advise parties in our country to place themselves in communication with this firm.

Isolated attempts to inaugurate this trade would only delay expansion of our commerce in this important staple, with which we can supply continental Europe as well as we supply it with grain and meat.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *December 30, 1899.*

COKE OVENS IN BELGIUM AND AUSTRALIA.

The following are replies to a Department instruction sent at the request of a resident of Virginia* to consular officers in Belgium and New South Wales, asking for a description of the coke ovens in use.

BELGIUM.

Consul Winslow, of Liege, writes:

There are three retort coke ovens in use in this consular district, so far as I am able to learn, that are adapted to the treatment of the by-products. They are as follows: The Semet-Solvay, built by Solvay & Co., 25 rue du Prince Albert, Brussels; the Coppée, built by Evence Coppée, 71 boulevard d'Auderlecht, Brussels; and the Collin, built by F. J. Collin, 12 rue de la Paix, Liege, Belgium.

They are of about the same value as regards the production of coke and the by-products, such as gas, sulphate of ammonia, tar, etc., in the treatment of Belgian coals, which contain from 16 to 21 per cent of volatile matter.

*To whom ADVANCE SHEETS have been sent.

The one in most general use in this consular district is the Semet-Solvay, owing largely to its durability and the low cost of operating it. It is built of masonry and forms a series of arches, with doors at all the openings that can easily be luted; so that the ovens are air-tight. The arrangement is such that all unnecessary loss of heat is avoided, and the combustion of gas in the flues is under such complete control that even heat is assured. To gain this, the roof of the arch is made 4 feet thick, and the doors are so designed as to avoid any cooling at the ends of the ovens.

These ovens vary in size, owing to the amount of volatile matter contained in the coal, from 30 feet long, $5\frac{1}{2}$ feet high, and 14 inches wide for coal containing from 15 to 17 per cent of volatile matter to the same length and height and $19\frac{1}{2}$ inches wide for coal containing 25 per cent or more of volatile matter. No absolute rule is given regarding the size of the oven for any particular grade of coal, but the exact dimensions must be determined for each individual case.

In this oven, with coal containing 15 per cent of volatile matter, three-fourths of the gas produced is sufficient to run it, while in the higher grades of coal, the proportion of gas consumed is much smaller.

The cost of erecting one of these ovens in Belgium, with a capacity of 1,200 tons of coke per year, is about \$1,833. They are said to be easily charged and emptied.

The following retort ovens have been built by Solvay & Co. in the United States within the last few years:

	Ovens.
Solvay Process Company, Syracuse, N. Y	25
Dunbar Furnace Company, Dunbar, Pa.....	50
Frank H. Buhl, Sharon, Pa.....	25
Riverside Iron Works, Wheeling, W. Va.....	60
Boston Garbage, Boston, Mass.....	6

The coals that are coked in this consular district contain 16 to 21 per cent of volatile matter, as against 30 to 35 per cent in the United States.

Consul Roosevelt writes from Brussels:

The pattern of retort coke oven in most general use in this district is the Semet-Solvay oven.

These ovens are made of brickwork and are so built as to constitute a series of arches resting upon abutments. In the interior of the sheds formed in this manner, flues with thin casings are set up. There are three of these flues superposed on each side of the oven. The abutments have a thickness of from 400 to 500 millimeters (1.32

to 1.64 feet). The thickness of the casings of the retorts used for the transmission of the caloric is 70 millimeters.

The following are the interior dimensions of the ovens: Length, 9 meters (29.52 feet); height, 1.7 meters (5.58 feet). The width varies according to the quality of the coal, being 1.18 feet for coals which yield but a small amount of volatile substances (15½ to 17 per cent) and as much as 1.64 feet for coals richer in gas (25 per cent and above).

Great care has been taken in these ovens to eliminate all causes of waste of heat and to obtain the best results from the combustion of gas, so as to make an equal partition of heat in the oven and thus obtain a regular and rapid oxidation. For this purpose, great thickness has been given to the arches, this thickness being 1.2 meters (3.94 feet). Double doors of sheet iron protect the inside doors of cast iron against the action of the air and prevent the extremities of the ovens from being cooled off from the outside. The doors are so arranged as to allow of an easy and efficacious lutation.

The combustion of gas is so arranged in this system of ovens that, with the suppression of the old system of direct heating by coal, it is only necessary to use a portion of the gas produced by the distillation.

There are three constructors of coke ovens in this consular district—

Solvay & Co., 25 rue du Prince Royal.

C. Bernard, 3 avenue Porte de Hal.

E. Coppée, 71 boulevard d'Auderlecht, Brussels.

The representative of Solvay & Co. in the United States is F. R. Hazard, president of the Solvay Process Company, Syracuse, N. Y.

I am indebted to Messrs. Solvay & Co. for much of the information submitted herein. Messrs. Bernard and Coppée refused to furnish me information relative to the manufacture or operation of their respective ovens.

The following tabulated statement shows the number of ovens of the Solvay & Co. process now working and those now being constructed, together with the yield for 1897 of volatile substance and the total output of coke. The total amount produced in Belgium for 1897 was 2,207,848 tons, and in the province of Hainaut, in this consular district, 1,651,650 tons.

Factories.	Number of ovens.	Yield of volatile substances.	Total output.
<i>Factories now working.</i>			
		<i>Per cent.</i>	<i>Tons.</i>
Havre, Belgium, Société des Charbonnages de Bois-du-Luc.....	100	15½ to 17	115,000
Norwich, England, Messrs. Brunner Mond & Co.....	30	31	30,000
Ruhrort, Germany, Société du Phenix.....	72	21	72,000
Seraing, Belgium, Société John Cockerill.....	52	16 to 18	62,000
Ghlin, Belgium, Société des Charbonnages du Nord du Flenu...	25	18 to 19	28,000
Syracuse, New York, Solvay Process Co.....	24	20	27,000
Couillet, Belgium, Société de Marcinelle et Couillet.....	75	18	75,000
Bois-du-Luc, Belgium, Société des Charbonnages de Bois-du-Luc	80	18	97,000
Drocourt, France, Compagnie des Mines de Drocourt.....	50	23	60,000
Flemalle, Belgium, Société des Charbonnages de Kessalers.....	41	17	48,000
Brymbo, England, Brymbo Steel Co., Limited.....	30	33 to 35	30,000
Crachet-Picquery, Belgium, Compagnie de Charbonnages Belges.....	25	23	31,000
Dunbar, Pennsylvania, Furnace Co.....	50	30	60,000
Stillington, England, Carlton Iron Co.....	25	29½	30,000
Sharon, Pennsylvania, Frank H. Buhl.....	25	33½	30,000
Wavrechain-sous-Denain, France, Compagnie des Mines d'Anzin	25	22 to 25	30,000
Total	720		825,000
<i>Factories now being built.</i>			
Bois-du-Luc, Belgium, Société des Charbonnages du Bois-du-Luc	26		
Ghlin, Belgium, Société des Charbonnages du Nord du Flenu...	25		
Fontaine l'Evêque, Belgium, Société des Charbonnages de Fontaine l'Evêque.....	30		
Elonges, Belgium, Société des Charbonnages Unis de l'Ouest de Mons.....	50		
Crachet-Picquery, Belgium, Compagnie des Charbonnages Belges.....	25		
Wavrechain-sous-Denain, France, Compagnie des Mines d'Anzin	25		
Dourges, France, Compagnie des Mines de Dourges.....	30		
Dechy, France, Compagnie des Mines d'Aniche.....	25		
Osaka, Japan, Chemical Works Osaka Co.....	16		
Stillington, England, Carlton Iron Co.....	35		
Glasgow, Scotland, Messrs. Baird & Co.....	50		
Widnes, England, United Alkali Co.....	25		
Plas Power, England, Broughton Solvay Coke Co.....	25		
Sarralben, Alsace-Lorraine, Deutsche Solvay Werke Aktien-Gesellschaft.....	25		
Total	412		

Consular Agent Reese sends the following from Charleroi:

Nearly all the recent installations of coke furnaces in the province of the Hainaut are of the Semet-Solvay system. Ammonia, benzoin, and tar water are used.

These furnaces are characterized by their great height, in proportion to their width—5 feet 9 inches to 7 feet in height by 1 foot 3½ inches to 1 foot 7½ inches in width.

There is generally from 0 to 40 per cent of fine dust, 0 to 15 per

cent reserved for the manufacture of coke. When they desire to obtain very pure coke, they wash the coal. Washed coal should be well dried before putting it in the crusher.

The character in volatile matter varies from 16° to 20°, according to the height and breadth of the furnace. If tall and narrow, the volatile matter is reduced.

Other well-known constructors of furnaces in Belgium are Evence Coppée and M. Bernard, who live in Brussels. Their furnaces are not made to save loss in by-products, but the heat that would be lost is utilized for the production of steam.

Coke furnaces for by-products are not as strong as others. The difference in price is made up, as more value can be obtained from them. The production of coke varies from 70 to 80 per cent. The length of time for coke to be in the ovens varies from twenty-two to forty-eight hours.

NEW SOUTH WALES.

Consul Goding, of Newcastle, sends the following description of enterprises in his district:

COOPERATIVE COAL AND COKE COMPANY.

The works are about 10 miles distant from Newcastle. The ovens are of the "beehive" pattern, made of brick, and are 11 feet in diameter and height. The capacity of each (there are about thirty ovens) is 6 tons of coal, forming about 3 tons of coke, made from coal passing through a three-fourth-inch screen. The coal is unwashed. The output of these ovens is about 240 tons of coke per week, the price in Newcastle ranging near 20s. (\$4.86) per ton. Retorts are not used, and all by-products are lost or pass into the coke.

WALLSEND PURIFIED COKE COMPANY.

This property is located 1 mile from the Cooperative Company's works. It is a much larger concern, the output being 500 tons of coke per week. The beehive pattern of oven is used, in connection with which is a flue invented by the present manager. This flue, the manager claims, is the means by which a very superior coke is produced. At this plant the coal is delivered into a hopper, whence it is carried by an elevator to a pair of rollers. After being crushed, it is carried by another elevator to distributing troughs, which divide it among three pulsating washing machines. The shale and brass fall through a grating and are carried away by a sluice, while the cleaned coal is carried forward by the water onto screens of three-fourth-inch mesh, which separate it into blacksmiths' nut and fine

coal; the latter is carried downwards in a sluice with a perforated bottom, and thus reaches the next pair in a sufficiently dry condition. After being crushed fine between these rollers, it is elevated to trucks, whence it is charged into the ovens. The method of washing as practiced at these works is automatic and is perfect, so far as it goes; but there is quite a percentage of dirt remaining in the coal that might be removed by a subsequent rolling and washing.

SINGLETON COKE WORKS.

These works are about 55 miles north from Newcastle. The washing process is of the simplest kind. The coal is thrown upon screens of three-fourth-inch mesh and the small coal thus separated is carried in trucks to a hopper, whence it is fed into wooden sluice boxes having a maximum fall of 1 in 36, and the coal is separated from the shale and brass by running water. The cleaned coal is then further separated by screens into blacksmiths' nut and fine coal, which is converted into coke in ordinary beehive ovens.

MINMI COKE COMPANY.

As these ovens are classed indefinitely, it will not be necessary to report on them.

EAST MAITLAND COKE COMPANY.

This plant is not operated on a very large scale, and what has been reported on the Cooperative Company's works will answer for this. No analysis is obtainable.

Analyses of washed and unwashed samples of New South Wales coal.

Description of coal.	Analysis of coal.					
	Moisture at 100° C.	Volatile hydro- carbons.	Fixed carbons.	Ash in coal.	Coke.	Ash in coke.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Cooperative Colliery.....	2.85	34.7	55.6	6.85	62.45	10.96
Purified Coal and Coke Co.....	2.5	35.9	56.4	5.2	61.6	8.44
Singleton Colliery.....	3.05	35.85	53.35	7.75	61.1	12.68
Minmi Colliery.....	2.55	34.15	53.35	9.95	63.3	15.71

Description of coal.	Analysis of washed coal.					
	Moisture at 100° C.	Volatile hydro- carbons.	Fixed carbons.	Ash in coal.	Coke.	Ash in coke.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Cooperative Colliery.....	1.6	37.35	57.2	3.85	61.05	6.3
Purified Coal and Coke Co.....	1.35	36.8	57.2	4.65	61.85	7.51
Singleton Colliery.....	1.65	36.7	56.5	5.05	61.65	8.19
Minmi Colliery.....	2.1	37.8	54.95	5.15	60.1	8.56

Analysis of New South Wales coke.

Description of coke.	Hydro- scopic moisture.	Volatile hydro- carbons.	Fixed carbons.	Ash.	Sulphur.	Specific gravity.
Purified Coke Co.:	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Pounds.</i>
Sample No. 1, from washed coal.....	0.4	0.02	91.33	7.82	0.43	1.964
Sample No. 2, from washed coal.....	0.41	0.51	90.54	8.01	0.53	1.837
Sample No. 3, from washed coal.....	0.42	0	90.79	8.38	0.41	1.85
Singleton Coke Co., sample from washed coal.....	0.67	0.11	89.02	9.67	0.53	1.798
Cooperative Coke Co.:						
Sample No. 1, from unwashed coal..	1.87	0.27	87.77	10.45	0.64	1.844
Sample No. 2, from unwashed coal..	0.22	0.34	86.71	12.06	0.67	1.813
Minmi Coke Co., sample from un- washed coal.....	0.62	0.32	85.65	12.62	0.79	17.37

Crushing strength of New South Wales coke.

Description of coke.	Size of cube.	Area.	Volume.	Weight.	Weight per cubic inch.	Total crushing force.	Crushing strength per square inch.
	<i>Inches.</i>	<i>Sq. in.</i>	<i>Cubic in.</i>	<i>Grains.</i>	<i>Grains.</i>	<i>Pounds.</i>	
Purified Coke Co.....	1.038	1.077	1.1184	243.1	217.4	1,700	1,368
	1.29	1.664	2.1467	502.2	234	2,450	1,899
	2.03	4.121	8.3654	1,963.7	234.7	3,500	1,724
Cooperative Coke Co.....	1.66	2.756	4.5743	1,066.8	233.2	3,955	2,383
	1.01	1.02	1.0303	201.7	195.8	625	619
	1.295	1.677	2.1718	481	221.5	1,500	1,158
Singleton Coke Co.....	1.154	1.332	1.5368	341.3	222.1	1,550	1,343
	1.275	1.626	2.0727	433.8	229.3	2,350	1,843
	1.039	1.08	1.1216	251.2	224	1,155	1,112
	1.74	3.028	5.268	1,162.8	220.7	3,500	2,011

The above specimens were arranged in cubes to test their capacity for resisting the crushing weight of the ore burden in the furnace. Although all the examples were more or less crushed, their power of resisting the crushing weight was much greater than that of all European coke that comes to these colonies. Coke made in rectangular ovens had even a greater resisting power than those mentioned; and it has been proven to the satisfaction of experts here that the rectangular ovens, while producing a superior quality of coke, are also much more economical.

The coke manufactured in this consular district, as regards the percentage of ash and the capacity for resisting pressure, is equal to many and superior to some of the coke manufactured in Europe.

Other than the companies mentioned, the Sulphide Company, of Cockle Creek, is arranging for the erection of a plant of the most modern type, and another company is being organized to manufacture coke on a very extensive plan, where all the by-products will be separated. These, however, will not be in operation for some months.

PROPOSED SHIPYARD IN VENICE.

The preliminary agreement has just been signed between the municipality of Venice and a company of Italian capitalists for the erection of shipbuilding works on the island of Sant' Elena.

As Sant' Elena is an almost deserted tract of land at the eastern extremity of this city, the work of installing the plant can be begun almost immediately. American manufacturers who would be interested in supplying machinery and materials should therefore communicate at once with the subscribing capitalists.

The enterprise will be under the general direction of Commendatore Bigliati, of Venice, formerly director-general of construction in the Italian navy. Other promoters of the scheme are Count Papadopoli, Baron Treves, Cavaliere De Benedetti, Cavaliere Ernesto Breda, and Commendatore Giuseppe Da Zara, of Venice; Gaetano Romiati, of Padua; and Cavaliere Eugenio Scartezzini, of Genoa.

Subscriptions have already reached the figure of 6,000,000 lire (about \$1,080,000), from which it may be inferred that the company has large plans in view. It is intended to supply the local steamboat companies with additions to their existing fleets, to offer dock accommodations to visiting vessels, and eventually to lay down the largest craft to order.

The backers of the enterprise are of the highest standing in the business community, so that our exporters need not feel the slightest hesitation in making immediate proposals.

H. ABERT JOHNSON,

VENICE, *January 26, 1900.*

Consul.

PROPOSED STEAMSHIP LINE TO FRANCE.

A line of steamers to ply between Philadelphia and the ports of the River Loire—namely, Nantes and St. Nazaire—is now being seriously considered. I am assured by those interested that enough encouragement has already been given the project to warrant its success. About two years ago, an effort was made to establish a line between Philadelphia and either Bordeaux or Marseilles; but, on account of opposition from parties interested in the lines from New York to Bordeaux and Marseilles, the project was abandoned so far as the latter ports were concerned. At that time, the projectors of the enterprise received much encouragement from commercial organizations and business men of Philadelphia.

A glance at the map of France will convince one that the entrance to the River Loire is the most logical eastern terminus of a French line. Nantes is much nearer Paris than either Bordeaux or Marseilles. Here, vessels may discharge cargoes into the cars of two of the leading railroads in France, namely, the Chemins de fer de l'État and Chemins de fer d'Orleans. The largest ocean steamers may enter the harbor at St. Nazaire, and vessels of 4,000 tons may come up the River Loire as far as Nantes.

A line of coast steamers from Spanish and Mediterranean ports, as well as from ports of England and the north of France, will connect at St. Nazaire with the proposed Philadelphia line, which will be known as Le Compagnie Maritime de l'Atlantique.

At present, there is no steamship line plying between Philadelphia and any French port, and the establishment of such a line would certainly benefit American commerce. Large quantities of merchandise come from Philadelphia to France via Liverpool, thus increasing the tariff charges by indirect shipments and almost doubling the time in transit as compared with a direct service.

The Department of the Loire-Inférieure has a population of more than 750,000, and the vast and varied manufactories along the river would no doubt afford a market for our raw material, such as coal, phosphate, petroleum, iron ore, and stave wood. American goods which have been introduced here find a ready sale and give good satisfaction, but the people naturally wish to see samples before making other purchases. If an effort were made, the United States could obtain much of the trade which now goes to England, Germany, and Austria. Americans wishing further information regarding the proposed steamship line should correspond with Capt. François Berginal, No. 10 rue Gresset, or A. J. Gauin, 24 Quai de la Fosse, Nantes.

JOSEPH I. BRITTAIN,
Consul.

NANTES, January 24, 1900.

NEW GERMAN STEAMSHIP.

The *Deutschland*, launched at the Vulcan Yards, in Stettin, on January 10, 1900, is intended to be a record breaker. The Hamburg-American Line, on whose account the steamer is being built at a cost of 14,000,000 marks (\$3,332,000), expects to have her in service between New York and Hamburg the coming summer, as a competitor to the *Kaiser Wilhelm der Grosse* of the North German Lloyd Line.

The following description will give an idea of the stupendous

proportions of the new steamship: Length over all, 684 feet; beam, 67 feet; molded depth, 44 feet; displacement, loaded, 23,200 tons; measurement, 16,200 tons registered; horsepower, 33,000; weight at time of launching, 9,300 tons.

The *Deutschland* is built according to the German Lloyd requirements for highest register of the four-deck-ship class, with her steering gear and rudder protected and under water line in compliance with instructions from the Imperial Navy Department, at whose disposal the ship would be in the event of war as a cruiser.

Steam is supplied from 12 double and 4 single boilers, with 112 fires, which drive 2 six-cylinder quadruple expansion hammer engines of 33,000 horsepower. The 2 propeller shafts are each 40 meters (131.23 feet) long and 630 millimeters (24.8 inches) in diameter; each of the bronze propellers being 7 meters (22.96 feet) in diameter.

The ship has a double bottom extending its entire length, which is divided into 24 compartments; 15 exceptionally strong bulkheads extending from keel to main deck and 1 longitudinal bulkhead in the engine room divide the steamer into 17 water-tight compartments. It is claimed that if 2 adjoining compartments were to fill with water the ship would not sink. The *Deutschland* is supposed to have accommodations for 1,057 passengers and a crew of 525.

There are 263 first-class cabins, 99 second-class cabins, and accommodations for 290 steerage passengers.

The first-cabin dining saloon is located amidship on main deck and has a seating capacity of 362.

As a matter of interest in connection with this report, I submit a table giving the dimensions of the largest steamers:

Name of ship.	Date.	Length over all.	Beam.	Depth.	Draft.	Displace- ment.	Speed.
		<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Tons.</i>	<i>Knots.</i>
Great Eastern.....	1858	602	* 83	57½	25½	27,000	14.5
Paris.....	1888	350	63	42	26½	15,000	20.5
Campania	1893	625	65	41½	28	19,000	21.8
Kaiser Wilhelm der Grosse..	1897	649	66	43	29	20,000	22.6
Oceanic.....	1899	704	68	49	32½	28,500	20
Deutschland	1900	684	67	44	† 30	23,200	† 23

* Over paddle box.

† Estimated.

STETTIN, January 15, 1900.

JOHN E. KEHL,
Consul.

SHIPBUILDING IN ENGLAND AND GERMANY.

Under date of January 17, 1900, Vice-Consul Murphy, of Bremen, sends the following translation of a German newspaper clipping:

In 1898, shipbuilding in England was more important than it had ever been before. In 1899, the business was still a little larger. The high figures in 1898 were due to a decrease of business in the preceding year caused by a strike of machine builders; but this does not explain the continued growth in 1899, which was undoubtedly caused by the continued development of shipping interests.

During the past eleven years, merchant vessels have been launched as follows:

Year.	Steamers.		Sailing vessels.		Total.	
	Number.	Gross tons.	Number.	Gross tons.	Number.	Gross tons.
1888.....	468	757,000	81	80,000	539	838,000
1889.....	595	1,083,000	95	125,000	690	1,209,000
1890.....	651	1,061,000	92	133,000	743	1,194,000
1891.....	641	878,000	181	252,000	822	1,130,000
1892.....	512	841,000	169	268,000	681	1,109,000
1893.....	438	718,000	98	118,000	536	836,000
1894.....	549	964,000	65	81,000	614	1,046,000
1895.....	526	904,000	53	45,000	579	950,000
1896.....	628	1,113,000	68	45,000	696	1,159,000
1897.....	545	924,000	46	28,000	591	952,000
1898.....	744	1,363,000	17	4,000	761	1,367,000
1899.....	714	1,414,000	12	2,000	726	1,416,000

In 1899, only 12 small sailing vessels were built, having an average gross tonnage of 167 tons. These are accordingly hardly worth considering. On the other hand, the average steamship has a gross tonnage of 2,000 tons, the total for the year being nearly 1,500,000 tons.

The English shipbuilders accordingly produced in this one year, exclusive of war vessels, only one-fifth less than the entire steamship fleet of Germany. To this must be added the war vessels, aggregating 168,000 tons, against 191,000 tons in 1898 and 95,000 tons in 1897. Of the former, 121,000 tons were added to the English war fleet. Most of the remainder were for the Japanese navy (42,000 tons), while 4,000 tons were for the United States. The total output of the shipyards was 1,584,000 tons gross.

Of the immense mercantile fleet, 1,149,000 tons were for Great Britain and 18,000 tons for its colonies. Of the remainder, the largest part (68,000 tons, against 37,000 in 1898) was for Germany, which, although it occupies the first place after England in shipbuilding, is nevertheless England's best customer. Austria took 37,000 tons; Norway, 28,000 tons; Spain, 26,000 tons; Denmark, 24,000 tons; Holland, 22,000 tons; Russia, 15,000 tons; Sweden, 9,000 tons; etc.

Lloyd's Bureau in London reports also concerning shipbuilding in other countries, and shows a total production of 881,000 tons—namely, 503 merchant vessels and 56 war ships.

For several years Germany has been at the head of this list, being excelled only in 1898 by the United States, owing to the latter's activity in building war vessels.

But Germany is again at the head. The principal countries are shown in the following table:

Country.	Total.	War vessels.
	<i>Tons.</i>	<i>Tons.</i>
Germany	252,000	40,000
United States.....	233,000	9,000
France.....	155,000	66,000
Italy.....	67,000	17,000
Russia.....	34,000	29,000
Holland.....	39,000	5,000
Denmark.....	30,000	3,000
Norway.....	28,000	
Sweden.....	11,700	1,300
Austria.....	11,500	2,300

In building merchant ships the United States is this year again ahead, its production being 224,000 tons, while Germany's was 212,000 tons.

Furthermore, this estimate is higher than that of the Bureau "Veritas," at Hamburg, which gives Germany only 178,500 gross tons. According to the English estimate, the British production was in 1899 seven times as large as that of Germany.

Of the steamships built in England, 9 were of over 10,000 tons gross register, 4 between 9,000 and 10,000 tons, none between 8,000 and 9,000 tons, 9 from 7,000 to 8,000 tons, 15 from 6,000 to 7,000 tons, 27 from 5,000 to 6,000 tons, and 39 from 4,000 to 5,000 tons. The largest ships launched were the *Oceanic*, of 17,274 tons; *Ivernia*, of 13,900 tons; *Minneapolis*, of 13,750 tons; *Saxon*, of 12,970 tons; *Saxonia*, of 12,750 tons; *Persic*, of 11,973 tons. Germany produced the *Patricia*, of 13,293 tons; *Grosser Kurfürst*, of 12,500 tons; and 6 other steamers of over 10,000 tons.

Of the English shipbuilding centers Glasgow, with 290,000 tons (inclusive of war vessels), remains at the head. Then follow: Newcastle, 279,000 tons; Sunderland, 242,000 tons; Greenock, 172,000 tons; Middlesborough, 146,000 tons; Belfast, 132,000 tons; Hartlepool, 128,000 tons.

The following table, prepared by the Bureau Veritas in Hamburg, shows the number of merchant vessels launched in and for Germany in 1899:

Where built.	Steamships.		Sailing vessels.	
	Num- ber.	Register.		Num- ber.
		Gross.	Net.	
In Germany:		<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
For German account.....	58	154,137	96,571	18
For foreign account.....	10	17,002	10,216	10
Abroad (for German account).....	19	47,027	29,936	17
Total	87	218,166	136,723	45

The growth of shipbuilding in Germany is shown in the following table, the figures representing gross tonnage:

Year.	Steam-ships.	Sailing vessels.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
1896.....			105,078
1897.....	108,939	12,430	125,369
1898.....	139,151	8,727	147,878
1899.....	171,139	7,436	178,575

The following table relates to vessels in course of construction in the English shipyards at the close of the years indicated:

Year.	Not finished at end of year.		Begun in fourth quarter of year.	
	Ships.	Register, gross.	Ships.	Register, gross.
		<i>Tons.</i>		<i>Tons.</i>
1896.....	390	784,000	196	391,000
1897.....	505	1,013,000	168	316,000
1898.....	560	1,401,000	187	432,000
1899.....	538	1,306,000	165	335,000

The number of sailing vessels covered by the last table was so small as not to be worthy of special mention.

INTERNATIONAL MARINE CONGRESS AT PARIS.

The newspaper organs of the commercial marine of France have published this week the programme for the sittings of the international marine congress which is to be held in Paris during the coming exposition of 1900. All the great maritime interests of the world—shipbuilders and shipowners—will be represented at this gathering.

The general statistical section will consider:

FIRST SECTION.

(1) What is the condition of the merchant marine of each country? This heading will involve a study covering the last thirty years of the progress or diminution of the commercial fleet, sail and steam, tonnage and speed, in the different countries.

(2) What is the nature of the government of the merchant marine of the various nations? How far does the government go in directing and aiding ocean and coast-wise commerce? Under this heading there will be a general discussion of the question of government aid, especially in regard to the technical education of sailors, the recruitment of crews, discipline, wages of sailors, the capacity and diplomas of commanders, the location and surveillance of ships in harbor.

(3) The condition of the different great shipyards of the world; statistics of production during the last thirty years; variations in wages and cost of production.

(4) Interests to be established between the maritime business of a port and the

railroads and canals touching it; the first cost of transportation by rail and water; competition of railroads and water.

(5) What are the different kinds of assistance and protection given to the merchant marine? Under this heading will be discussed maritime business reserved especially to the national flag, bounties for shipbuilding and for navigation per mile of voyage, extra bounties for speed, privileges reserved to ships built at home, exemptions and reimbursement of certain taxes, bounties to postal and to regular lines.

(6) What are the relations between the merchant marine and the navy? The obligations of officers and sailors in time of war; the utilizing of merchant ships as cruisers, scouts, transports, auxiliaries, and ambulance boats; special subsidies accorded such ships; the requisition of ships.

SECOND SECTION.

(1) What influence does a tariff exert on the merchant marine?

(2) The establishment of free ports and free zones within a port.

(3) The fluctuation of freights during a certain number of years and the cause of such fluctuations. Special reference will be had to national and local marine taxes.

(4) How should gauging be unified? the different methods of gauging; determination of impossible tonnage.

THIRD SECTION.—TECHNICAL MATTERS IN SAILING.

(1) What modifications should be adopted in existing international regulations to avoid collisions. Discussion: Improvements in signaling, lights, and maneuvering, the fixing of speed, life-saving apparatus, legal interpretation of article 9 of international regulations, obligatory sea routes in the great maritime highways.

(2) Should the amount of a cargo (*la ligne de charge*) be the subject of an international agreement?

(3) What international arrangements should be made to assure the safety of navigation? A discussion of ocean currents, the destruction of floating wrecks and derelicts, the movement of icebergs, ocean maps and pilot charts, wireless telegraphy, carrier pigeons, buoys and lights on dangerous coasts, the duty of rendering succor and assistance at sea.

FOURTH SECTION.

(1) What improvements can be made in the construction of and material used on a ship in order to increase its usefulness commercially? Discussion: The hull, machinery, boilers, different motor powers, fuel, coal, wood, petroleum, supply stations.

(2) The situation in regard to salaries, wages of seamen, the returning of crews to their country. Discussion: The employment of negroes, Lascars, and other natives.

(3) The control exercised in different countries over marine brokerage. Discussion: Regulations, monopolies, responsibility, prices.

(4) What reforms in pilotage and towing are necessary? Discussion: The capacity and recruiting of pilots, their responsibility, the regulation of prices.

(5) What measures should be taken for the improvement, development, and neutralization of submarine cables?

FIFTH SECTION.—AID TO SEAMEN.

(1) What steps should be taken to ameliorate the material and moral condition of seafaring men? Discussion: Aid to wrecked sailors and their families, sailors and their homes, libraries and associations, free voyages, different kinds of aid and instruction.

(2) What are the best means for the organization of savings banks, relief funds, mutual-aid and mutual-insurance companies? Discussion: The rôle of the state in such institutions; results secured by individual initiative.

(3) What is the best hospital and hygienic service for sailors? Discussion: Hospitals on land and sea, conditions on shipboard, different hygienic measures.

The above programme is considered very complete, and it is expected that all the great maritime nations will be represented at this congress.

JOHN C. COVERT,
Consul.

LYONS, *January 24, 1900.*

INCREASING THE EFFICIENCY OF STEAM ENGINES.

The recent centennial anniversary of the Royal Technical High School at Charlottenburg was made the occasion of several important announcements concerning the work of that renowned institution, which embodies in a remarkable degree the advanced technical science which has done so much to push Germany forward into the front rank of manufacturing nations. Among these, the first rank is by common consent accorded to the paper of Prof. E. Josse, head of the mechanical laboratory, in which are described with elaborate detail the results of his experiments with an original and highly interesting process for increasing the efficiency of steam engines by utilizing the heat of the exhaust steam for evaporating another liquid having a lower boiling point than water.

It is well known that the steam boiler and engine, notwithstanding all improvements which it has undergone during the past hundred years and its incalculable services to mankind, is nevertheless a wasteful and extravagant device for converting the energy stored in fuel into mechanical power. The ordinary simple high-pressure engine, which, after passing steam through one cylinder, discharges it into the air, utilizes hardly more than 5 per cent of the value of the fuel consumed under its boiler. The compound engine, in which the steam, after passing successively through two, three, or more cylinders, is condensed, and the warm water of condensation restored to the boiler, utilizes under favorable conditions 12 to 13 per cent of the fuel energy, and there the economy appears to have stopped. An eminent American engineer has recently published an article reviewing the development of the steam engine, and closes his essay with the expressed opinion that with the compound machines and improved cut-off of recent years the practical limit of efficiency of the steam engine has been reached. The invention described

by Professor Josse introduces a novel element into the problem and opens a new chapter in the record of steam-engine development.

The process is the joint discovery of Mr. G. Behrend, a Hamburg engineer, and Dr. Zimmermann, of Ludwigshafen; and, although first patented in 1889, it has only recently been matured and its application perfected by the employment of an auxiliary engine, which, utilizing the heat contained in the exhaust steam, gains as high as 56 per cent additional motive power without increasing the expenditure of fuel. The principle and process involved are simple and may be briefly described, as follows:

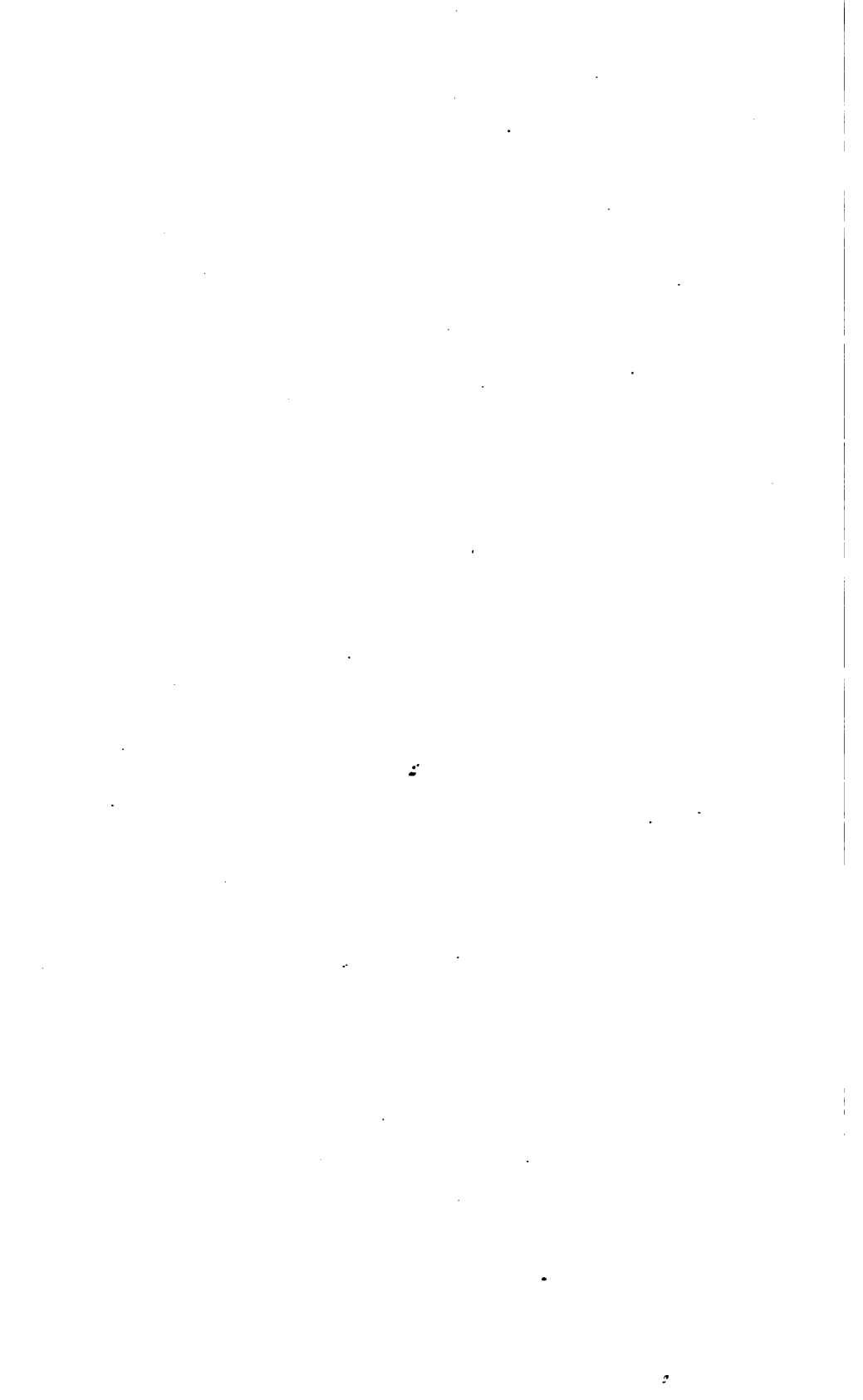
It is plain that, with all progress which has hitherto been made in steam-engine practice through higher pressures, superheated steam, economical cut-offs, or successive cylinders, there is always an important and inevitable loss of heat energy when the steam, having done its work, is discharged into the open air or changed back to water by contact with cold water in a condenser. When the exhaust is into the open air, the steam has a temperature of about 100° Celsius (212° F.); when it passes into a condenser, the steam has a temperature of 60° to 70° Celsius (140° to 160° F.), according to the vacuum. The corresponding latent heat of steam, given up upon change of form from steam to hot water, has hitherto run to waste in the condensing or cooling water, or in the air. Messrs. Behrend and Zimmermann attacked the problem of utilizing this wasted caloric by employing it to create a new supply of steam by evaporating some liquid which has a lower boiling point than water, and for this purpose they chose, after many experiments, sulphurous acid (H_2SO_3), which is not only cheap and easily obtained, but has the further advantage of a viscous consistency and lubricates the inner working surfaces of the machinery without corroding them. Their demonstrations, although not practically conclusive, were so promising that Professor Josse, as a technical authority on this subject, took up the problem, and, after several months of highly satisfactory laboratory experiment, caused to be constructed and connected with an ordinary working steam engine of the compound type an additional condenser and auxiliary engine, the power of which could be exactly measured. The whole working apparatus is shown in the engraving herewith submitted, and the technical details will be explained by the drawing, and may be thus described:

Referring to the diagram, in which dimensions are given in millimeters, H and N represent the high and low pressure cylinders of an ordinary compound steam engine, with a stroke of 500 millimeters (19.69 inches) and a speed of 41.5 revolutions per minute. From the low-pressure cylinder N the exhaust steam passes into the surface condenser, called in the diagram the "vaporizer." In this vaporizer,



PHOTOGRAVURE OF MAOPERATION.

CONSULAR REPORTS No. 235—face page 436.



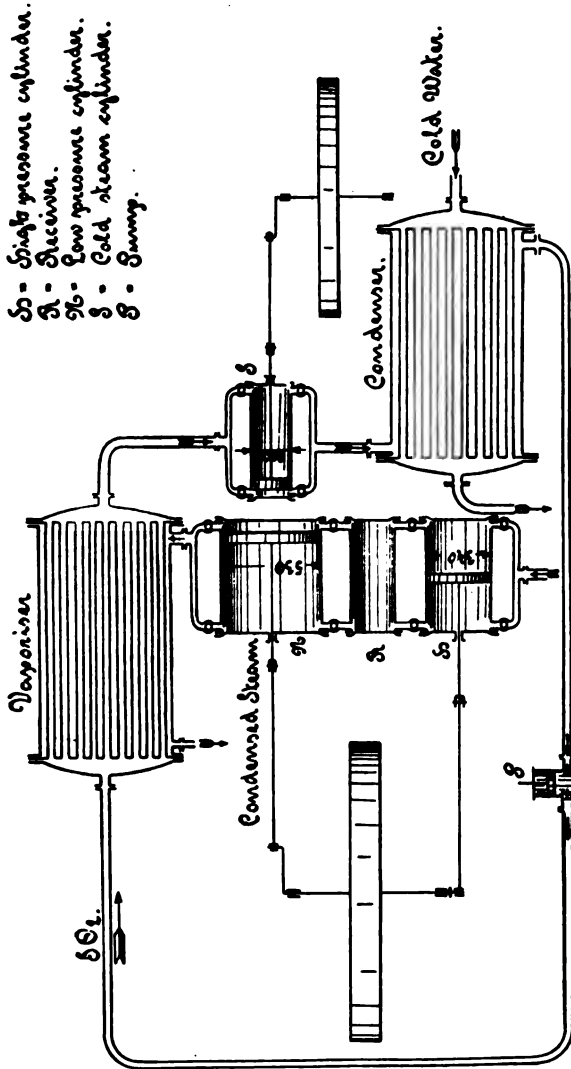


DIAGRAM SHOWING THE RELATIONS OF WORKING PARTS.

or condenser, the cooling medium used, instead of water, is liquid sulphurous acid (H_2SO_3), which has a boiling point so low that it is immediately decomposed by the heat of the exhaust steam, whereby the sulphur dioxide gas (SO_2) is liberated, which passes over into the cylinder of the auxiliary engine S, where its work is done as in an ordinary steam engine. The auxiliary cylinder has a diameter of 300 millimeters (11.81 inches) and a stroke of 500 millimeters, with a speed of 77 revolutions per minute.

After passing through this cylinder, the sulphurous vapor enters the surface condenser, around the tubes of which cold water flows as in an ordinary steam plant. Here the sulphurous vapor is condensed to liquid and is forced by the pump P back into the vaporizer, where it begins its cycle again, the same SO_2 being used over and over again indefinitely. There are therefore, in fact, two condensers, the first serving, as it were, as a boiler or steam generator for the auxiliary engine; and this boiler, instead of being fired by coal, obtains all its heat from the exhaust of an ordinary steam engine, and, instead of converting water into steam, evaporates a liquid which is much more volatile—*i. e.*, has a far lower boiling point.

In the long series of recorded tests with the plant shown in the engraving herewith transmitted, the following results were attained:

The steam engine is of the compound type, of good, modern construction, and, being given a steady load, developed 34 indicated horsepower, with a consumption of 8.6 kilograms (18.96 pounds) of steam per indicated horsepower hour. The auxiliary machine working with the sulphurous vapor indicated 19 horsepower—that is, an increase of 56 per cent and yielding, instead of 1 horsepower, 1.56 horsepower for the same steam consumption and reducing the steam consumption from 8.6 kilograms to 5.5 kilograms (from 18.96 to 12.13 pounds) per indicated horsepower.

The experiments showed on the average that for every 15 kilograms (33.169 pounds) of steam passing through the main engine, 1 horsepower could be gained in the auxiliary machine. Applied, therefore, to an ordinary single-cylinder steam engine, exhausting into the air at high temperature, the percentage of power saved by this new device would be very much higher than the economy reached in these experiments, which, as has been shown, were made with a highly improved compound engine. From the average of these experiments, it may be broadly stated that, given a fairly economical compound engine, using $7\frac{1}{2}$ kilograms (16.5 pounds) of steam per indicated horsepower hour, half an indicated horsepower could be produced in the auxiliary machine for every indicated horsepower developed in the main engine. Assuming an average vacuum of 60 centimeters (23.62 inches), corresponding to a temperature

of 60° Celsius (140° F.), the saving of heat must be accomplished by using a liquid which can be vaporized to a high pressure at or below that temperature. Assuming, further, the upper and lower limits of temperature within which the operation is confined to be 60° and 20° Celsius (140° and 67° F.), the pressure of the sulphurous vapor would range from 10.05 down to 2.35 atmospheres above open-air pressure. A working pressure as high as ordinary steam-boiler pressure is therefore readily obtained at a comparatively moderate temperature. Moreover, the volume of sulphurous-acid vapor necessary to contain the number of heat units corresponding to the work to be performed is much smaller than the volume of steam which would be required for the same purpose. As the saving to be effected by the auxiliary engine depends directly upon the difference between the highest and lowest temperatures involved, the greatest gain will therefore be made either when the water in the surface condenser is as cold as possible or when the heat of the exhaust steam from the engine is at a maximum, as is the case with a single-cylinder steam engine without condenser, which may be anywhere up to 212° F.

The expense of this improvement is practically all in the construction cost of the vaporizer, condenser, and auxiliary engine itself, and its economy may be realized from the fact that the exhaust steam from a 2,000-horsepower central-station engine should furnish power to drive an additional 1,000-horsepower engine, which can be connected as an extra cylinder to the steam engine or run independently, and thus increase by 50 per cent the power developed without adding a pound to the quantity of fuel consumed. When, in view of the present coal famine throughout Europe, it is remembered that the steam engine energy of Germany alone, afloat and ashore, is not less than 3,717,264 horsepower, the commercial importance of such an improvement will be readily apparent.

FRANK H. MASON,
Consul-General.

BERLIN, *January 10, 1900.*

GERMAN COMMERCIAL MUSEUM.

An oriental commercial museum has lately been opened in Berlin for the double purpose of establishing a permanent exposition of samples, on the plan of the Philadelphia Commercial Museum, and of acting as a chamber of commerce in facilitating trade between Germany and the Orient. This sample warehouse brings to the view of the German public the agricultural and industrial productions of eastern countries.

A complete library and reading room, containing literature and newspapers from the Orient, are at the disposal of merchants, manufacturers, and all others interested. A bureau of information is also attached, the object of which is to give instruction and reliable information about business, firms, and the peculiar conditions of various lines of trade in the Orient. The work of this bureau is to constantly watch the markets of the different eastern countries, and gather and study the confidential reports which are sent in by its numerous staff of merchants and paid correspondents located in those countries.

This new enterprise publishes a paper called *Oriental Correspondence*, which transmits the latest and most important news from the bureau's correspondents. Another publication, issued periodically, called the *Orient*, has for object to foster trade relations and bring about closer connections with the people and governments of oriental sections. This review is in charge of a gentleman who for many years past has been attached to the Turkish embassy at Berlin as dragoman. He is universally admitted to be one of the best experts on eastern affairs and trade conditions.

Great expectations are entertained by German governmental and commercial circles as to the benefits which will accrue to German export trade from the workings of this museum. The Sultan of Turkey has shown his sympathy by ordering the imperial Ottoman factories to send a full line of samples of their products to the museum. The Prince of Bulgaria has done the same, and the Governments of Roumania, Greece, and Servia will follow their example.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *January 6, 1900.*

GERMAN COMMERCE IN 1899.

The industrial and commercial development of Germany, which commenced some five years ago and has increased steadily, made further progress in 1899. Almost every branch of industry and commerce participated in this expansion, and the agricultural classes have also been benefited; for, while the crops have been good, prices have risen—another illustration of the fact that the increase of industrial establishments helps the farmer by giving him a better home market.

It is a remark often heard from Americans traveling here, that no other European country shows such general signs of prosperity among all classes as Germany. Almost every well-informed person

admits that this has been the result of the industrial development of the Empire, and the leading newspapers are strong advocates of commercial expansion.

The Frankfurter Journal of Commerce, one of the most influential publications of this kind in Germany, says:

The demand to check the development of Germany into an industrial empire by divers artifices is, to put it mildly, amazing. In an age in which commercial intercourse has torn down narrow national barriers, there can be no question of a return to national self-sufficiency, even in countries which by reason of their great area would be much better able to do so, as, for example, the United States of America and Russia.

The growth or diminution of German imports and exports since 1893 is given below:

Year.	Imports.			Exports.		
	Value.	Increase.	Decrease.	Value.	Increase.	Decrease.
1893.....	\$984,000,000	.....	.....	\$772,000,000	.....	.....
1894.....	1,020,000,000	\$36,000,000	.....	726,000,000	.....	\$46,000,000
1895.....	1,020,000,000	.....	\$10,000,000	815,000,000	\$89,000,000	.....
1896.....	1,085,000,000	75,000,000	.....	894,000,000	79,000,000	.....
1897.....	1,158,000,000	73,000,000	.....	902,000,000	8,000,000	.....
1898.....	1,304,000,000	146,000,000	.....	952,000,000	50,000,000	.....
Jan. 1 to Sept. 30:						
1898.....	945,000,000	.....	.....	687,000,000	.....	.....
1899.....	950,000,000	5,000,000	.....	728,000,000	41,000,000	.....

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *January 4, 1900.*

NEW GERMAN TARIFF SCHEDULE.

The economic committee of experts for the preparation of trade-political measures for the German Empire has finished a new tariff schedule, which differs considerably from that at present existing.

It consists of seventeen divisions, as follows:

- (1) Productions of agriculture and forestry, including food articles of all zones.
- (2) Mineral and fossil raw products.
- (3) Prepared wax; paraffin, cod-liver, and other mineral oils; also, goods of which these are the chief component parts—*i. e.*, soap, candles, etc.
- (4) Chemical and pharmaceutical preparations, including colors and dyestuffs.
- (5) Animal and vegetable weaving materials and fibers (hair, wool, silk) and products thereof.
- (6) Leather and leather goods, including saddlery, etc.
- (7) Rubber and gutta-percha goods, including oilcloths.
- (8) Webbing and plaited goods composed of vegetable materials, excepting spinning fibers.
- (9) Brooms, brushes, etc.

- (10) Goods made of animal and vegetable molding and carving materials.
- (11) Paper, bristol board, paper pulp, and goods made of same.
- (12) Books, pictures, and paintings.
- (13) Wares of stone and other mineral substances, excepting clay.
- (14) Pottery wares.
- (15) Glass and glassware.
- (16) Metals and metallic ware.
- (17) Sundries, such as firearms, machines, watches, vehicles, cushioned furniture, human hair and manufactures thereof, prepared feathers for ornamental use, fans, hats of all kinds, tuning instruments and toys, and all other articles that are not classed with the preceding sixteen divisions.

The most noticeable feature of the new schedule is its minute specialization of articles; it contains one thousand three hundred and sixty-five numbers, of which three hundred and seventeen pertain to articles of agriculture and forestry. This has been done to meet the wishes of the different parties at interest. The new schedules contain numerous annotations and explanations. The principal purpose appears to be a closer and more exacting grading. This, I believe, will affect many articles of American manufacture, such as bicycles, machines, and fine iron ware.

SIMON W. HANAUER,
Vice-Consul-General.

FRANKFORT, *January 20, 1900.*

NEW SPANISH TARIFF.

I wish to call the attention of our exporters to the increased duties on a number of articles now exported from the United States to this country, as provided for in the new Spanish tariff which went into effect on January 1, 1900. These increased duties will seriously affect our exports of typewriters and, especially, oils.

Typewriters in Spain are considered at present a luxury, and not a necessity, among business men; and although in time manufacturers, lawyers, and others will use them, still, of course, if the price is increased, so also will be the difficulty in introducing them, as none are made in this country. According to the new Spanish tariff, typewriters, which formerly paid (No. 268 of the old tariff) 24 pesetas per 100 kilograms plus 20 per cent war tax, or 29 pesetas per 100 kilograms (say, at current exchange, less than 2 cents per pound weight), are now dutiable at (No. 289, new tariff) 8 pesetas per kilogram (not per 100 kilograms, as in the old tariff) plus 20 per cent war tax—9.6 pesetas per kilogram, or at current exchange over 64 cents per pound weight, or about thirty-two times as much as before. It must be noticed, however, that the old tariff was on the gross weight, whereas the new tariff charges on the net weight; so, as it may be

fairly reckoned that the packing of a typewriter weighs about as much as the machine itself, the difference is really only sixteen times as much. An ordinary typewriter weighs from 20 to 30 pounds with its cover and the accessories usually supplied with it, so that the duty on a first-class American typewriter is now, say, from \$13 to \$20, whereas before it averaged about half a dollar per machine.

Another item in the new Spanish tariff covers phonographs and their parts, which formerly were not enumerated in the Spanish tariff, but are now dutiable the same as typewriters (No. 290, new tariff)—64 cents per pound weight.

Every description of electrical, scientific, and office labor-saving apparatus or instrument is now also classed under a heavy rate (Nos. 291, 292, 293, and 294, new tariff), plus 20 per cent war tax. For instance, an Edison mumograph, which formerly paid \$1.45, is now dutiable at \$4.

The duties on sewing machines, velocipedes, staves, and lumber remain unchanged.

The new tariff has doubled the duty previously charged on paraffin wax; this wax imported from the United States is now dutiable at 48 pesetas per 100 kilograms gross weight, plus 20 per cent war tax, or 57.60 pesetas (\$8.46 per 220.46 pounds), and from Great Britain at 40 pesetas (\$5.88), or a difference of 17.60 pesetas (\$2.58) per 220.46 pounds. I understand from our agents here of oil and paraffin concerns in the United States that this increase makes business impossible in Spain. Their clients, who have made important contracts, have decided not to import more wax, and New York firms have been cabled to stop all shipments. Should the Spanish Government offer to reduce the duty to 40 pesetas per 100 kilograms (220.46 pounds) gross weight, the same duty as is now paid on British wax, it would still be too high to compete with stearin, which pays only 24 pesetas (\$3.52) per 100 kilograms and 20 per cent war tax. The various candle makers who have contracts with British manufacturers have also been obliged to give instructions to stop all shipments, as even the British paraffin can not be introduced and pay the 40 pesetas per 100 kilograms duty.

The Barcelona candle makers have decided to send a commission to Madrid to protest against the increased duties on paraffin. It would appear that the increase in the duty was made in favor of the stearin manufacturers, who pay 1 peseta (14.7 cents) per 100 kilograms gross weight on tallow which is used for the manufacture of stearin.

Lubricating oils from the United States under the new tariff are dutiable at 60 pesetas (\$8.82) per 100 kilograms (220.46 pounds) net and 13 pesetas (\$1.91) per 100 kilograms for barrel and 20 per cent additional war tax, while those from Russia and Great Britain are

now dutiable at 50 pesetas (\$7.35) per 100 kilograms net and 10 pesetas (\$1.47) per 100 kilograms for barrel, without war tax. Prior to January 1, 1900, the duty on lubricating oils from the United States was 30 pesetas (\$4.41) per 100 kilograms gross weight, with 20 per cent additional war tax, while the British and Russian oils paid 30 pesetas per 100 kilograms gross without any war tax. It is an advantage to our exporters to pay duty on the net, instead of the gross, weight of the oil, but the increased duty of 30 pesetas per 100 kilograms will entirely stop all importations of lubricating oils from the United States and seriously interfere with those of cylinder oils; and even if the duty should be reduced to that now paid on British and Russian oils, we can not compete with the vegetable oils.

JULIUS G. LAY,
Consul-General.

BARCELONA, *January 22, 1900.*

FISCAL CHANGES IN AUSTRIA-HUNGARY.

Important fiscal changes took effect in Austria-Hungary with the entry of the new year.

The legal unit of value in this Empire has for some years been the crown (20.3 cents), but in practice the florin or gulden (40.6 cents) has been used in all calculations and accounts between individuals. No gold has been in circulation. The small change has been the silver crown, 10 and 20 heller pieces (100 hellers to the crown), and copper coins of 1 and 2 hellers and 1 kreutzer (2 hellers). The coin of largest value in circulation was the silver florin; then came, with no intermediate denomination, the 5-gulden paper note, followed by the 10-gulden note and others of higher denominations.

By imperial decree, after January 1, 1900, accounts between individuals must be reckoned in crowns and hellers. This has entailed a vast amount of work upon many kinds of business establishments—banks, for instance—all of whose books must be changed. Confusion and misunderstandings are unavoidable at first, as the new measure of value changes the figure at which every commodity is quoted on the market, and apparently, to some minds, doubles prices.

So far, the circulating medium is unaltered. The silver florin and the paper gulden still comprise all the money afloat above the crown, and will be good during the whole of the present year, each florin or gulden being reckoned as 2 crowns. Nobody seems to know when they will be supplanted by gold or paper of crown values.

As a result of this change, stamps of all sorts, which have heretofore been in kreutzers or florins, must now be in hellers or crowns. This departure covers a wide area, because not only postal matter

and all legal documents bear stamps, but also bills rendered by merchants to their customers for over 20 crowns (\$4).

The change in postage stamps has presented an opportunity to equalize and slightly increase postal rates. For instance, the former rate to the United States was 10 kreutzers (4 cents). The new rate is 25 hellers (5 cents). Under the old rate it cost less to send a letter from here to America than from America to this country. The increase applies to all other countries with which Austria is connected through the Postal Union.

With the new year, the tax of 1 kreutzer on each copy of domestic newspapers printed and of 2 kreutzers on each foreign periodical—including the newspaper, illustrated weekly, etc.—coming into the Empire is abolished. It has long been felt in Austria that this tax was both a relic of barbarism and a check on enlightenment; so, when the question of abolishing it was seriously broached, no opposition appeared except in a few sporadic cases. The Government was united and Parliament was practically unanimous.

The public is already deriving benefit from the change. Newspapers generally have reduced their subscription rates, and many have at the same time increased their size or their frequency of issue.

By the repeal of the newspaper tax the imperial treasury will annually lose a million dollars or so, but this loss may be recouped by increased postal revenues.

FRANK W. MAHIN,

REICHENBERG, *January 5, 1900.*

Consul.

TRUSTS IN AUSTRIA-HUNGARY.

There is a marked tendency in Austria toward the formation of trusts out of industries competing in the same line of products.

The hat makers have organized to promote their interests. The paper factories have formed a union. Makers of sugar and of saccharine products have a close organization and recently met to consider an increase of prices. The shoe factories have a compact union and have resolved to raise the price of foot wear. Makers of knit goods have combined to reduce certain expenses. A corporation formed at Budapest is acquiring possession of the gas plants throughout Hungary.

All these combinations are new, having been formed within the past year. There are also various older combinations. While all are not "trusts," as the word is generally understood in the United States, yet their object is in every case the same—to increase profits by advancing prices or by reducing production or expenses.

It is worthy of note that Austria has no protective tariff, except

on a very few articles—cigars and tobacco, for instance, the traffic in which is a Government monopoly. The almost prohibitive duty on canned and bottled food articles is not protective in a commercial sense. The high tariff is imposed because the sealed goods can not be examined, the same articles in bulk paying but a fraction of the sealed rate.

FRANK W. MAHIN,
Consul.

REICHENBERG, *January 10, 1900.*

STRIKES IN TEXTILE INDUSTRIES IN EUROPE.

During the year 1899, many strikes occurred in Bohemian textile factories against the eleven-hour and for a ten-hour day. In some cases, they were successful; in others, concessions were made; on the whole, the strikers gained a material advantage.

The chief objection of the Bohemian manufacturers to decreasing the hours of labor was that in Germany, in similar establishments, the eleven-hour day prevailed, and that to cut off one-eleventh of the daily working time would seriously handicap them in the race for business.

But now comes the news from the great textile center of Germany that more than 20,000 workers, stimulated by the victory of their collaborators in Bohemia, are agitating for the ten-hour day, and that they propose to organize the entire textile-working force of Saxony in furthering this movement.

It therefore looks as if the ruinous competition from Germany, feared by the Bohemian manufacturers, would be checked.

FRANK W. MAHIN,
Consul.

REICHENBERG, *January 8, 1900.*

IMPROVED COTTON BALES FOR AUSTRIA.

The improved methods of baling cotton—such as the Lowry, for instance—receive much commendation from purchasers of American cotton in this district. The old square bale, they say, caused great waste of cotton. They allege, besides, that it gave opportunity for fraud; that stones or other heavy foreign substances were sometimes found in the heart of a bale, put there apparently to increase weight. By the new methods of baling, the machinery employed rejects all foreign substances; and not only is the item of waste eliminated, but the possibility of fraud is reduced to a minimum.

From the current talk among cotton buyers in this district, I infer that the general use of the new baling methods will tend to increase

cotton exports from the United States, which—to this Empire—declined last year in comparison with former periods, British India reaping the benefit thereof. Local cotton importers generally say they will buy no more square-baled cotton. The trade of this section is worth cultivating, as the consular district contains 101 cotton-spinning mills, with 1,102,454 spindles in active operation.

FRANK W. MAHIN,

REICHENBERG, *January 11, 1900.*

Consul.

COTTON OIL IN MARSEILLES.

American cotton oil continues to maintain its supremacy in the Marseilles market, in spite of continued agitation in favor of prohibitive, or at least restrictive, duties. The arrivals during the year 1898 were slightly less than during the year previous, but prices were firmer. Arrivals during a series of years have been as follows:

Year.	From—		
	United States.	England.	Other countries.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
1899.....	104,603,369	3,219,477	504,660
1898.....	112,461,829	1,791,938	258,803
1897.....	92,461,142	14,973,140	422,657

The varying prices per 100 kilograms (220.46 pounds) during the last ten years are shown below:

Year.	American oils.		English oils.	
	<i>Francs.</i>		<i>Francs.</i>	
1890.....	56.75	\$10.95	56.50	\$10.98
1891.....	56.58	10.92	54.45	10.51
1892.....	53.08	10.24	50.95	9.85
1893.....	70.85	13.67	60.375	11.66
1894.....	56.916	10.95	53.00	10.22
1895.....	48.125	9.29	46.45	8.95
1896.....	44.33	8.55	43.04	8.50
1897.....	41.60	8.03	40.30	7.78
1898.....	41.125	7.94	40.25	7.77
1899.....	44.60	8.61	43.00	8.29

The lowest price recorded for American oil for the past year was 38.70 francs (\$7.47), and the highest 54 francs (\$10.42), the average being 44.60 francs (\$8.60). The December average was 54 francs (\$10.42), the highest of the year. Prices for English oil ranged from 37.50 to 51.75 francs (\$7.24 to \$9.99).

The stock on hand on December 31 amounted to 15,000 barrels

of American oil and 2,000 barrels of English oil, as against a total of 43,000 barrels carried over on December 31, 1898.

The arrivals of American oils during the year by marks and barrels were as follows: Prime winter, 12,933 barrels; prime summer white, 6,696 barrels; prime summer yellow, 91,306 barrels; total, 269,106 barrels.

ROBERT P. SKINNER,
Consul.

MARSEILLES, *January 18, 1900.*

WOOL OPERATIONS IN MARSEILLES.

Consul Skinner sends the following, dated Marseilles, January 6, 1900:

The new business year opens with an advance in prices amounting to from 5 to 12 per cent for all classes of wools. The local movement amounted to 156,045 bales during 1897 and 156,873 bales during 1898. During 1899, the total importations at Marseilles were less by 14,559 bales than during the preceding year. This diminution is attributed largely to the great mortality among the sheep of Syria and Mesopotamia, and to some extent to the low prices prevailing early in the year. A summary for the year 1899 shows that the stock on hand December 31, 1898, amounted to 31,000 bales; arrivals during the year, 141,314 bales; sold or forwarded in transit during 1899, 154,814 bales; stock on hand December 31, 1899, 17,500 bales. During the calendar year 1899, the declared value of Marseilles wool exported to the United States amounted to \$363,234.26. The following table shows the origin of all wool received or forwarded in transit from Marseilles during the calendar year 1899:

Origin.	Entered at Marseilles.	Forwarded in transit.
	<i>Bales.</i>	<i>Bales.</i>
Levant.....	987	4,085
Georgia.....	15,774	13,851
Syria.....	24,208	637
Tunis.....	2,188	162
Morocco.....	2,149	1,780
Algiers, Algeria.....	4,261	515
Oran, Algeria.....	1,477	963
Constantine, Algeria.....	4,380	2,396
Spain.....	3,556	11,328
Italy.....	315	884
Plata.....	10	7,215
Australia.....		34,283
India.....		83
Great Britain.....	550	3
Miscellaneous.....	92	2,279
Corsica.....	906	
Total.....	60,853	80,461

TREATMENT AND FINISH OF ENGLISH WOOL FABRICS.

In compliance with the request for information of a New York manufacturer (to whom ADVANCE SHEETS have been sent), Consul Day, of Bradford, sends the following:

For years, it has been an acknowledged fact that one of the strongest features in the extensive textile trade of Bradford has been the excellence of the finish on its fabrics. It indeed speaks well for this district when it can be stated that hardly a week passes but what continental manufacturers send their goods into the district to be finished and receive their final touch before being sold in this market as English made. Of the excellence of Bradford finishes, it is needless to speak, as every United States importer is fully conversant with them; but it is worth pointing out that an essentially United States fabric—*i. e.*, cotton Italian lining—is to-day receiving more patronage at the hands of American buyers than at any time in the history of the trade. This is an anomalous state of affairs when the present tariff is supposed to adequately protect American makers of this class of goods, and it seems strange that more goods of this class should be shipped under a high than under a low tariff. Buyers in New York and other cities state that their principal reason for buying Bradford linings is the superiority of the finish.

If there is one thing in which Bradford manufacturers, dyers, and finishers have made great progress the last two years, it is in the art of finishing fabrics for the market. Necessitous circumstances have compelled them to do this, particularly in catering for the American markets. With the present tariff on woollens and worsteds, they saw that they must make the poorest fabrics look like the best, and the present condition of trade in this district is a fair commentary on their energy and push.

An expert, to whom I was speaking the other day on this subject, said there was no doubt that one of the principal deficiencies in American-made textiles was the finish. "It seems rather singular," he said, "that with English machinery and English workmen American manufacturers should not be able to turn out goods equally as well finished as those on this side." "But what is the principal failing in the American goods?" I asked. The answer was, "The goods lack that soft, clothly handle so peculiar to Bradford products."

There is no doubt that "handle" is the prime factor in the finish of all Bradford-made textiles. It does not matter what class of finish is required, this is never lost sight of. The principal com-

plaint which Bradford finishers make of American textiles is that the nature and weave of the cloth are not considered as they should be. The American fabrics, they say, appear to be too roughly and strongly handled while being finished. The vitality of the wool is considerably reduced; as one expert says, it is "done to death." The principal features in any marketable cloth due to the application of finish are a soft, full handle, a compact texture, a permanent luster, and firmness, combined with solidity.

There is no doubt that this district has an advantage in its climatic conditions. The atmosphere of England is damp, and this, it is well known, feeds the wool fiber, wool being very hygroscopic in its nature, readily absorbing moisture from the atmosphere and retaining it with considerable tenacity. In the various processes of manufacture, all the moisture is removed from the wool fiber; and when the woven fabric comes to be finished, it is the work of the finisher to restore it to its original state. But practical men here say that American finishers of textiles forget this important truth—that wool when woven into a piece can be easily and permanently spoiled, and when once spoiled it can never be restored to its natural state. This can be done in many ways; for instance, by finishing at too high a temperature, artificial heat—especially when all the natural moisture of the fabric has been evaporated—playing a very destructive part in reducing the softness of the fabric. Too much attention can not be paid to singeing and hot pressing all fabrics, for with the natural dry atmosphere of the United States—the very opposite of that obtaining here—these points should be especially watched.

In the treatment of woolen fabrics, most manufacturers have special processes of their own. In ordinary worsted coatings, for instance, the procedure in dyeing and finishing is as follows:

The pieces are first "crabbed"—*i. e.*, scoured in boiling water containing soda or alkali—to remove all the oil and grease which may be in the piece; then they are steam blown for some five or six hours, and allowed to stand on a gauntry until cold. This is followed by a further process of scouring in a "dolly," the water being afterward wrung out by a hydro-extractor. They are then dried over a cylinder drying machine and dyed. This process is succeeded by washing through cold water for cleansing, and then they are slightly steamed again. For "navy blues" they are dollied in fuller's earth, for the purpose of making them soft, and then re-washed, the water being extracted in a hydro-extractor. They are then dried over a hot-air drying machine, the selvage only coming in contact with the machine, cropped in a cutting or shearing machine, and brushed. If a nap is required, they are "teaseled."

If the cloth is found to be too dry, it is run through a "dewing" machine and damped again to the extent required. After this, the two ends of the piece are placed face to face and folded, warm press paper being inserted between the cuttles or folds, and placed in a hydraulic press. The paper, heat, and weight vary according to the finish desired. The fabrics are then passed through a steaming machine, where all the finish marking is taken off, the face side being toward the steam, and afterwards cuttle folded—face sides together—and placed in a cramp, where they are allowed to remain for several hours.

For a "botany" worsted, the process varies slightly, according to the finish required. The fabrics are first scoured through a dolly machine in hot water, etc., and rinsed in cold water. They are also subject to milling, require more press finish, and take more weight in this process than ordinary worsteds.

It may be here pointed out that one of the main factors in securing the superior appearance is the treatment the pieces receive in the steaming process and the subsequent press finish.

Linings (beatrices, etc.) are first crabbed through hot water—of which they can not have too much—and boiled for four hours. (The steaming process here would make them tender.) They are then taken over a cylinder drying machine and dried, then over a hot plate and slightly singed, and afterwards brushed and dyed. When this process is completed, they are washed and dried, singed again, washed again, dried, and pressed in a hot pressing machine, this latter being repeated—the finer the pieces the lighter the treatment throughout.

Dress goods (such as lusters, mohairs, wool figures, etc.) are as a rule dealt with in the following manner:

They are crabbed, steam blown to set, allowed to stand over night, dried, singed, passed through a four or five hole squeezer and scourer to give polish and finish, and dyed. If the piece comes up dull, it is run through soap and water, singed again, and pressed. If water marked, it is passed through the five-hole squeezer and washed. Light shades are not crabbed, but stoved with brimstone, which gives a finish, then scoured to remove the smell. Creams are singed over a copper plate. Mohairs are pressed lightly, with little heat.

Seeing that the question of soft "handle" is so imperative with our manufacturers, I would call attention to an old method of finishing in Yorkshire, which is still in use to-day and is found advantageous. This is done by the old dewing machine, the object of which is to remove the harsh feel caused by the tentering and pressing operations, and to impart to the cloth a full and soft handle. In

order to effect this, an imperceptible film of water is thrown onto the piece, varying in quantity from one-fourth of a pound to 6 pounds, according to the character and nature of the fabric.

The quantity of water absorbed by the piece may tempt some manufacturers to increase its weight by causing it to carry an unnecessary amount. This deception, however, would be apparent as soon as the fabric was exposed in a dry room, when it would both handle and weigh considerably lighter.

LACE AND HOSIERY IN ENGLAND.

The completion by the National Board of Trade of British export figures for the year 1899 renders possible a review of lace and hosiery, the two chief productions of this district. The Board of Trade is an official institution, located in London, and is the only English authority for the collection of export statistics, each exporter being compelled by law to make prompt return of every shipment. The figures thus obtained are supposed to be accurate, and unquestionably are approximately so. While the figures given below deal with exports from the island generally, they may be said to apply almost exclusively to this consular district, consisting of the shires, or counties, of Nottingham, Derby, and Leicester. Nottingham is the greatest center for manufacture of both machine-made lace and hosiery, while the product of the lace machines of the west of England, Scotland, and Derbyshire for the most part comes here for sale. Hosiery goods are manufactured principally in and around Nottingham and Leicester. Separate record is kept of the export of silk lace, and the following instructive comparison is obtained:

Exports of silk lace.

To—	1897.	1898.	1899.
United States.....	\$315,733.64	\$217,342.75	\$270,261.07
France	84,341.30	61,877.54	59,137.70
Canada.....	30,556.75	36,255.42	69,795.34
Other countries.....	309,115.20	300,117.05	304,866.75
Total.....	739,746.89	615,592.76	704,060.86

Statistics of cotton-lace exports are not so separated. The following figures show the aggregate exports of both silk and cotton lace for the last three years. The lace and hosiery figures for 1883 are also given as an interesting comparison, for from that period dates the strong competition with Plauen embroidered lace and Saxon hosiery. Since that time, also, foreign duties have been increased on the Continent and varied in America.

Exports of silk and cotton lace and hosiery.

Year.	Silk and cotton lace.	Hosiery.	
		Cotton.	Wool and mixed.
1883.....	\$14,104,124.36	\$5,844,948.65	\$1,914,330.23
1897.....	11,896,144.64	1,741,506.22	4,020,950.49
1898.....	11,609,001.67	1,628,272.50	3,813,253.13
1899.....	12,259,073.62	1,567,475.31	4,425,376.10

The following review is summarized largely from articles prepared by an expert and published in the Nottingham Guardian:

The year 1899 was one of slow but decided improvement in some branches of the lace trade. For a series of years, foreign competition and adverse fashions have had a detrimental effect on the fancy silk and cotton millinery-lace departments of the trade. The depression still continues in the silk branches, but there has been a decided change for the better in the cotton millinery-lace branches; prospects are brighter at present than at the close of any recent year, and the whole trade is in a more healthy condition. There have been few departures in the current styles of lace during the year, but decided general progress has been made, though business has not yet regained the buoyancy of sixteen years ago.

BOBBINET AND PLAIN GOODS.

These branches have had a most prosperous year. The demand for fine nets for embroidery purposes has been well sustained. Large quantities have been exported to Plauen and elsewhere, and fair quantities have been required for the home market. The machines in this district, as well as those in the west of England, have been kept well employed at abnormally high prices. There has also been an enormous demand for mosquito nets during the year. Orders were placed reaching several months in advance, and naturally prices went up rapidly, and the highest point reached has been firmly maintained. There has not been an equal buoyancy in the demand for Mechlin and zephyr tulles; but there has been the ordinary demand for these and for spotted nets. The sales of Paris, rice, hat, and other stiff-foundation nets have not been equal to some former years; but prices have been higher. There has been less agitation in the silk Chantilly, Cambrai, and Mechlin tulles, and the machines have been more occupied in the production of cotton nets.

COTTON MILLINERY LACE.

These departments have done an increasing business through the year. The machinery producing fine super Valenciennes, maille ronde, and other expensive qualities has been well engaged, and orders have been in arrear. Normandy Valenciennes in various qualities have also been selling extensively, and Victoria laces have likewise been in favor; but the chief development has been in the demand for torchon laces and insertions. These goods are produced in many grades, from the heavy linen and cotton goods for mantles to the finer and more costly descriptions for millinery purposes; and also the cheaper qualities for assortments and making-up purposes. During the last few months, the aggregate demand has been so extensive that stocks have been cleared out, and producers of the cheaper qualities have advanced their prices and refuse to supply goods at the former rates. This course has caused considerable inconvenience and loss to manufacturers who

had booked large orders in advance at the old price. Towards the close of December circulars were issued in this branch and in the crochet and warp lace departments, announcing an advance in prices or the reduction of discounts from 5 to 10 per cent. This has been a comparatively new experience in the fancy-lace trade; the old idea being that while prices might be reduced to any extent, it was impossible to advance them. The new plan, however, was inaugurated by the Plauen and St. Gall manufacturers, who have demanded an advance of from 10 to 15 per cent. Point de Paris, Renaissance, and Malines laces have been in moderate request, but have undergone no recent expansion. A new demand has sprung up for striped and Hamburg nets to match sets of laces and insertions. Irish crochet, American laces, and common warp goods have recently been in renewed request. Not so with Swiss embroidery, everlasting, and beau-ideal trimmings, which have had a bad year.

SILK LACES AND VEILINGS.

The demand for Chantilly and other silk laces has not been satisfactory. The production is now in comparatively few hands, and there has not been much encouragement for the production of novelties during the year. The plain and fancy veiling branches, however, have been extensively developed. Chenille spots on black and white colored nets, as magpie, jackdaw, and fancy combinations, have been much in favor. The large demand, however, produced a superabundant supply, and competition became unhealthy, so that prices were often reduced to an unremunerative level. The trade, however, is certain to continue, though there is a severe continental competition.

APRONS, CAPS, BLOUSES, AND RUFFLES.

There has been a growing business in fancy made-up goods—such as aprons, caps, blouses, and ruffles—giving employment to many hands. Fair quantities of ruchings, frillings, and other decorations for the neck have been moving; but there has been no expansion of demand in this direction. Toilets and other fancy household decorations have been in fair request.

CURTAIN AND FURNITURE LACE.

There has been an extensive demand for lace curtains, window blinds, and antis. The designs and styles current for the year have been largely varied, from the heavier guipure style with geometrical designs to the Anglo-Swiss style with more floral decorations. There has been a large output of goods from local machinery, but it is evident that increased quantities are imported into the city from the outlying districts and from Scotland. The demand has not been sufficiently active to give full employment to the machinery. There is severe foreign competition, and it has become unprofitable to continue the production of certain classes of cheap goods. Manufacturers, however, are doing their best to develop the trade, though the former expansion is not realized. There is considerable growth in the manufacture of nets and furniture laces, an increasing number of hands find employment, and there is a scarcity of suitable female labor.

THE FOREIGN DEMAND.

During the latter part of the year, extensive orders were placed for the United States. The colonial demand steadily increases, noticeably that of Canada. The war with the Transvaal has caused a temporary derangement with the orders from some minor markets. There has been a steady, but not an increasing, business with France, Germany, Spain, and Italy. The increased foreign production and protective duties make business very difficult with some of the European markets. The exports as a whole, however, show a slight increase over the last two years.

HOSIERY.

The cotton-hosiery trade has not improved during the year. There has been continued shrinkage in the production of cotton stockings and socks, and it has become a serious question whether this part of the trade is being permanently transferred. The foreign demand at present is little more than one-fourth of the amount twenty years ago. There has been a good demand through the year for wool and mixed hosiery. An extensive business has been done in merino and cashmere goods for America and for the colonies. Stockings, half hose, and larger underwear have been equally in request. A large quantity of machines have been kept well employed. Owing to the largely enhanced value of merino and wool yarns, manufacturers have been compelled to increase their prices. For some time this was resisted, till buyers found that delay was to their disadvantage. The advancing prices did not impede business, but stimulated the demand; and this part of the trade is in a more healthy condition, notwithstanding the foreign competition. On the whole, however, hosiery has been less favorably placed than the lace trade during the year.

PRESENT MARKET CONDITIONS.

Lace.—The plain branches of the lace trade continue to flourish, and all available machinery in the city and neighborhood, at Derby, and in the west of England is well employed at the current abnormal prices. Bobbinets, Mechlin tulles, and mosquito nets are all well engaged, and prices are firm. Cotton-millinery laces, nets, and insertions are moving extensively. Novelties are well received, and the stocks of old goods have diminished. Manufacturers of Valenciennes and imitation torchons are doing a good business. Prices of many kinds of ordinary goods have been advanced, and business in some quarters is thereby being checked. Moderate orders are being placed for Irish, American, and crochet trimmings and laces; but there is not much buoyancy in these branches, and higher prices are a disturbing element. Honiton braids and purls are moving in good quantities. Veilings of various kinds are in good request, and manufacturers of caps, aprons, blouses, ruffles, and other fancy articles are well employed. Silk laces and nets move slowly, and few novelties are appearing in this department. The lace-curtain and window-blind branches are doing a fair amount of business, though competition is severe at home and abroad. The difficulty with prices has been further increased by the advance demanded by dyers, dressers, and finishers.

Hosiery.—There is no change to report in the hosiery trade. The cotton branches are in an unsatisfactory condition, and adequate prices for ordinary goods are not obtainable. The wool and mixed branches are doing a good business, more especially in fine cashmeres. Manufacturers of vests and combinations are well engaged; and there is a good demand for specialties of stockings and half hose. Silk goods meet with moderate inquiry.

In concluding a reference to market conditions in the light of export figures, a special writer in the *Guardian* emphasizes the necessity for the city to "hasten its export trade to its former dimensions." I asked him what he thought essential for such a result, and he replied:

- (1) Removal of foreign protective duties.
- (2) Renewed inventiveness on the part of manufacturers.
- (3) A better understanding between employers and employed, and the removal of certain restrictions imposed by trades unions.

This diagnosis of the complaint is excellent from an English standpoint and confirms observations heretofore made in these reports, but the difficulty occurs in compounding a remedy. Exports of lace and hosiery for the United States through this office for the quarter ended December 31, 1899, were: Lace, \$1,050,560.65; hosiery, \$23,486.04—as compared with: Lace, \$655,475.36; hosiery, \$180,881.67, for the corresponding quarter in 1888. But the increase in lace is not regarded as permanent, the hosiery decrease is alarming, and in the best informed local circles it is no longer considered disloyal to show nervousness over the situation or express fear of ever-growing foreign competition.

REPORTED COMBINE IN THE LACE TRADE.

The following report of an impending combine in the lace trade appeared in a recent number of the Nottingham Post, and has been given circulation by London papers, but confirmation of it is difficult to obtain:

It is contemplated to form a combination of the whole of the lace-curtain manufacturers in Scotland and England. The principal seat of this trade in Scotland is in Ayrshire and in England in Nottingham and district. The matter is in the hands of Mr. Scott Ling, who promoted several recent combines. It is understood that all the parties interested are cordially cooperating. A Glasgow correspondent states that a combination of the Scotch and English lace trades is in progress. The Scotch houses favor the scheme.

S. C. MCFARLAND,

NOTTINGHAM, *January 16, 1900.*

Consul.

WOOLS, YARNS, AND HOSIERY IN THE ENGLISH MARKET.

The following article, from the January Knitters' Circular and Monthly Record, one of the chief authorities of England, published at Leicester, this consular district (Nottingham), contains information in regard to English prices for wools, yarns, and hosiery (with comparisons and analytical comment) which is in so much request by American dealers and manufacturers that it is given in full:

The past year being one of exceptional variation in the price of raw materials, yarns, and finished goods, a comparative table of same should be of interest.

Table I gives the price of raw cotton at Liverpool in January and December last year (1899), and from this will be seen the advance in the qualities noted. Tables II and III give a similar comparison of the various wools as sold at the London wool sales at about the same time. From this it will be seen that the advance has been something phenomenal for the short time, and varies from 0½d. (1 cent) on special low qualities to 1s. 8½d. (42 cents) on a special extra-superior quality. Table IV gives a few advances of hosiery yarns. It is this table that is of par-

ticular interest, as it is here that a basis for the finished goods can be taken. Merino yarns show an advance of 5d. to 6d. (10 to 12 cents) per pound; worsted yarns, 1d. to 10d. (2 to 20 cents); cashmeres, 5½d. to 1s. 4d. (11 to 32 cents).

TABLE I.—*Cotton.*

Description.	January, 1899.		December, 1899.	
	<i>Pence.</i>	<i>Cents.</i>	<i>Pence.</i>	<i>Cents.</i>
Middling, American.....	3½	6.2	4½	8.6
Good fair, Egyptian.....	4½	9.9	6½	13.5
Good, Egyptian.....	5½	10.6	7	14
Good, Broach.....	3	6	4½	8.2
Fine, Broach.....	3½	6.6	4½	8.8

TABLE II.—*Wools, average prices.*

Description.	January, 1899.			December, 1899.		
	<i>s.</i>	<i>d.</i>	<i>Cents.</i>	<i>s.</i>	<i>d.</i>	<i>Cents.</i>
<i>Inferior and faulty.</i>						
Victoria:						
Greasy fleece.....	0	7	14	0 10½	to 0 11	21 to 22
Scoured fleece.....	1	2	28	1 2½	to 1 6½	29 to 38
Washed fleece.....	1	1	26			
Queensland:						
Greasy fleece.....	0	7	14	0 9½	to 0 10½	19 to 21
Scoured fleece.....	1	1	26			
Washed fleece.....	1	0	24			
New South Wales:						
Greasy fleece.....	0	7	14	0 8	to 0 10½	16 to 21
Scoured fleece.....	1	1	26	1 3	to 1 6½	28 to 38
Washed fleece.....	1	0	24			
South Australia:						
Greasy fleece.....	0	6	10	0 8	to 0 10½	16 to 21
Scoured fleece.....	1	1	26			
Washed fleece.....	0	10	20			
West Australia:						
Greasy fleece.....	0	5½	11	0 7	to 0 8	14 to 16
Scoured fleece.....	1	0	24			
Washed fleece.....	0	10½	21			
Tasmania:						
Greasy fleece.....	0	7	14			
Washed fleece.....	1	0	24			
New Zealand:						
Greasy fleece.....	0	6	12	0 8	to 0 9	16 to 18
Scoured fleece.....	1	2	28	1 4	to 1 6	32 to 36
<i>Medium and good.</i>						
Victoria:						
Greasy fleece.....	0	8	to 0 9	0 11½	to 1 2	23 to 28
Scoured fleece.....	1	3	to 1 5	30 to 34	1 7	to 1 11½
Washed fleece.....	1	2	to 1 4	28 to 32	1 3½	to 1 5½
Queensland:						
Greasy fleece.....	0	8	to 0 9	16 to 18	0 11	to 1 2
Scoured fleece.....	1	2	to 1 3	28 to 30	1 8	to 1 11½
Washed fleece.....	1	1	to 1 3	26 to 30		
New South Wales:						
Greasy fleece.....	0	8	to 0 9	16 to 18	0 11	to 1 2
Scoured fleece.....	1	2	to 1 3	28 to 30	1 7	to 1 11
Washed fleece.....	1	1	to 1 3	26 to 30		
South Australia:						
Greasy fleece.....	0	7	to 0 8	14 to 16	0 11	to 1 0
Scoured fleece.....	1	2	to 1 3	28 to 30	1 6	to 1 9½
Washed fleece.....	0	11	to 1 1	22 to 26		

TABLE II.—Wools, average prices—Continued.

Description.	January, 1899.			December, 1899.		
	<i>s.</i>	<i>d.</i>	<i>Cents.</i>	<i>s.</i>	<i>d.</i>	<i>Cents.</i>
<i>Medium and good—Continued.</i>						
West Australia:						
Greasy fleece.....	0	6	12 to 14	0	8½	17 to 25
Scoured fleece.....	1	1	26 to 28	1	6	36 to 43
Washed fleece.....	0	11½	23 to 25			
Tasmania:						
Greasy fleece.....	0	8	16 to 20			
Scoured fleece.....	1	1	26 to 28	1	7	39 to 44
New Zealand:						
Greasy fleece.....	0	7	14 to 16	0	9½	19 to 22
Scoured fleece.....	1	3	30 to 32	1	6½	38 to 46
<i>Superior.</i>						
Victoria:						
Greasy fleece.....		0	20	1	2½	29 to 34
Scoured fleece.....		1	36	2	0	49 to 54
Washed fleece.....		1	41			
Queensland:						
Greasy fleece.....		0	20	1	2½	29 to 31
Scoured fleece.....		1	34	2	0	49 to 54
Washed fleece.....		1	34			
New South Wales:						
Greasy fleece.....		0	20	1	2½	29 to 33
Scoured fleece.....		1	34	1	11½	47 to 54
Washed fleece.....		1	34			
South Australia:						
Greasy fleece.....		0	19	1	0½	25 to 28
Scoured fleece.....		1	32	1	10	45 to 50
Washed fleece.....		1	28			
West Australia:						
Greasy fleece.....		0	17	1	1	26 to 28
Scoured fleece.....		1	30		1	46
Washed fleece.....		1	28			
Tasmania:						
Greasy fleece.....		1	24			
Washed fleece.....		1	30			
New Zealand:						
Greasy fleece.....		0	18	0	11½	23 to 26
Scoured fleece.....		1	36	1	11½	47 to 53
<i>Extra superior.</i>						
Victoria:						
Greasy fleece.....		1	24	1	5½	35 to 38
Scoured fleece.....		1	43	2	3	55 to 68
Washed fleece.....		2	49		2	40
Queensland:						
Greasy fleece.....		0	22	1	4	32 to 34
Scoured fleece.....		1	45	2	3	55 to 61
Washed fleece.....		1	41			
New South Wales:						
Greasy fleece.....		0	22	1	5	34 to 36
Scoured fleece.....		1	45	2	3	55 to 62
Washed fleece.....		1	41			
South Australia:						
Greasy fleece.....		0	21	1	2½	29 to 32
Scoured fleece.....				2	1	51 to 55
West Australia (greasy fleece).....		0	18			
Tasmania (greasy fleece).....		1	30			
New Zealand:						
Greasy fleece.....		0	21	1	1½	27 to 29
Scoured fleece.....		1	39	2	2½	54 to 55

TABLE III.

Description.	January, 1899.									
	Inferior.			Medium and good.			Superior.		Extra superior.	
	<i>s. d.</i>	<i>Cents.</i>		<i>s. d.</i>	<i>s. d.</i>	<i>Cents.</i>	<i>s. d.</i>	<i>Cents.</i>	<i>s. d.</i>	<i>Cents.</i>
Cross-bred:										
Greasy half-bred.....	0 7	14	0 8	to 0 9	16 to 18	0 10	20	0 11	21	22
Greasy X-bred.....	0 5	10	0 5½	to 0 6½	11 to 13	0 7½	15	0 9	18	19
Greasy Lester & Linc.....	0 5	10	0 5½	to 0 6	11 to 12	0 6½	13	0 7½	15	16
Slip half-bred.....	0 7	14	0 8	to 0 9	16 to 18	0 10	20	0 11	22	23
Slip X-bred.	0 5	10	0 6	to 0 7	12 to 14	0 8	16	0 9	18	19
Slip Lester & Linc..	0 5	10	0 5½	to 0 6½	11 to 13	0 7	14	0 7½	15	16
Scoured half-bred...	0 10	20	0 11	to 1 0	22 to 24	1 1	26	1 3	30	31
Scoured X-bred.....	0 8	16	0 9	to 0 9½	18 to 19	0 10	20	0 11	22	23
Scoured Lester & Linc.....	0 6	12	0 7	to 0 8	14 to 16	0 9	18	0 10	20	21
Lambs:										
Greasy merino.....	0 6	12	0 7	to 0 9	14 to 18	1 0	24	1 2	28	29
Greasy X-bred.....	0 4	8	0 5	to 0 6	10 to 12	0 7	14	0 8	16	17
Scoured merino.....	0 11	22	1 0	to 1 2	24 to 28	1 4	32	1 6	36	37
Scoured X-bred.....	0 6	12	0 7	to 0 8	14 to 16	0 9	18	0 10	20	21
Washed merino.....	0 10	20	1 1	to 1 5	26 to 34	2 0	40	2 6	60	61
Washed X-bred.....	0 6	12	0 7	to 0 8	14 to 16	0 9	18	.....	.....	.....
Cape:										
Greasy.....	0 5½	11	0 6½	to 0 7½	13 to 15	0 8	16	0 9	18	19
Fleece (western)....	0 8	16	0 8½	to 0 9½	17 to 19	0 10	20	.....	.....	.....
Fleece (eastern)....	0 7	14	0 7½	to 0 8½	15 to 17	0 9	18	.....	.....	.....
Scoured snow white	1 1	26	1 2	to 1 3	28 to 30	1 4	32	1 8	40	41
Natal:										
Greasy.....	0 5½	11	0 6	to 0 6½	12 to 13	0 7	14	0 7½	15	16
Scoured.....	1 0	24	1 1	to 1 2	26 to 28	1 4	32	.....	.....	.....
Falkland Islands and Punta Arenas (greasy)	0 4½	9	0 5½	to 0 6	11 to 12	0 6½	13	0 6½	14	15

Description.	December, 1899.			
	<i>s. d.</i>	<i>s. d.</i>		
Greasy fleece:				
Low, mixed, and badly classed.....	0 6	to 0 7	\$0.12	to \$0.14
Inferior.....	0 7½	to 0 8½	.146	to .17
Good medium, with color.....	0 9	to 1 0	.18	to .24
Best parcels of finer sorts.....	1 0½	to 1 3	.25	to .30
Scoured fleece:				
Low, mixed, and badly classed.....	0 8	to 0 11½	.16	to .23
Inferior.....	1 0	to 1 5	.24	to .34
Good medium, with color.....	1 5½	to 1 11½	.35	to .47
Best parcels of finer sorts.....	2 0	to 2 1½	.49	to .52
Greasy merino:				
Low, mixed, and badly classed.....	0 7½	to 0 9	.146	to .18
Inferior.....	0 9½	to 1 0½	.19	to .25
Good medium, with color.....	1 1	to 1 3½	.26	to .31
Washed merino, best parcels of finer sorts.....		4 2½		1.02
Cape and Natal:				
Greasy Natal—				
Inferior.....	0 7½	to 0 8½	.15	to .17
Good medium, with color.....	0 9	to 0 11	.18	to .22
Best parcels of finer sorts.....		1 0		.24
Greasy western—				
Low, mixed, and badly classed.....	0 7½	to 0 8½	.157	to .17
Inferior.....	0 9	to 0 10½	.18	to .21
Good medium, with color.....	0 11	to 1 0	.22	to .24
Best parcels of finer sorts.....	1 0½	to 1 1½	.25	to .27

TABLE III—Continued.

Description.	December, 1899.			
	s.	d.	s.	d.
Cape and Natal—Continued.				
Washed fleece, west—				
Inferior	0	10½	to 1	1
Good medium, with color	1	1½	to 1	2½
Best parcels of finer sorts	1	3	to 1	6½
Snow white:				
Low, mixed, and badly classed	1	2	to 1	3
Inferior	1	3½	to 1	6
Good medium, with color	1	6½	to 2	1
Best parcels of finer sorts	2	1½	to 2	4½
Inferior	0	7	to 0	8½
Good medium, with color	0	9	to 0	10

TABLE IV.—Comparative prices of hosiery yarns for 1899.

Approximate quality.	Average price, January, 1899.			Average price, December, 1899.		
	s.	d.	s.	d.	s.	d.
Cotton yarns:						
1-30 super American		0	6		0	7½
1-30 Egyptian carded		0	8½		0	11½
1-30 prima maco		0	9½		0	10½
1-30 prima combed		1	0½		1	2
Merino yarns:						
White		0	9½		1	2
Natural 20-80		0	10½		1	2
Natural 50-50		1	3		1	8
Natural 70-30		1	6		2	0
Worsted yarns:						
Lower quality		1	1½		1	2½
Medium quality	1	2½	to 1	3½	1	4
Super quality		1	6		1	10
508		1	8		2	4
568		1	10		2	8
Cashmere yarns:						
Lower quality		1	7½		2	1
Medium quality		1	9		2	6
24-1 AA		1	11½		3	0
608		2	1		3	4
708		2	2		3	6
Fingering yarns:						
Medium		1	4½		1	7½
Ex. super		1	8		2	3
Ex. super		1	10½		2	2
Silk:						
40-2 common Schappe		4	3		7	0
70-2 common Schappe		5	3		8	0

It now remains to see if the finished article bears a similar advance. This it would be impossible to give in tabulated form, owing to the many different articles made and the variety of qualities in which they are produced. Still, a few examples may not be out of place to show at least what these should have advanced, leaving it to our own readers to judge for themselves as to whether such an advance has been realized or not.

Socks.—Let us take as example a child's cashmere sock. A set of sizes for this would be taken at a weight of 3 pounds, and this, with a yarn at 1s. 9d. (43 cents)

on January 1, which to-day is 2s. 8d. (65 cents), would show the following result
 Five dozen socks, 3 pounds at 1s. 9d. per pound, 5s. 3d. (\$1.28); five dozen socks, 3 pounds at 2s. 8d. per pound, 8s. (\$1.95); difference, 2s. 9d. per case, or 6½d. (13 cents) per dozen advance.

Half hose, seamless.—Weight, 2 pounds per dozen from medium cashmere; 2 pounds at 1s. 9d. per pound, 3s. 6d. (85 cents); 2 pounds at 2s. 8d. per pound, 5s. 4d. (\$1.30); difference, 1s. 10d. (45 cents) per dozen advance.

Half hose, seamless rib.—From fingering yarn, with weight, say, 3 pounds per dozen; 3 pounds at 1s. 10¼d. per pound, 5s. 7½d. (\$1.37); 3 pounds at 2s. 2d. per pound, 6s. 6d. (\$1.58); difference, 10¼d. (21 cents) per dozen advance.

Merino shirt or pant.—From a 70-30 yarn, at an average weight of 8 pounds per dozen; 8 pounds at 1s. 6d. per pound, 12s. (\$2.92); 8 pounds at 2s. per pound, 16s. (\$3.89); difference, 4s. (97 cents) per dozen advance.

Cashmere shirt.—Weighing 8½ pounds, from yarn, say, AA quality, would show: 8½ pounds at 1s. 11¼d. per pound, 16s. 8d. (\$4.05); 8½ pounds at 3s. per pound, 23s. 6d. (\$6.20); difference, 8s. 10d. (\$2.15) per dozen advance.

From inquiries we have made, we may safely say such advances have not been realized except under special circumstances. The reason for this is stated to be that manufacturers have bought at lower rates, which contracts have not yet expired; when they do, they must be advanced. This being so, it strikes one that such advance will have to be a very large one and more difficult to obtain than a gradual rise would have been.

Under the present system, there is a liability that finished goods may never realize the proportionate advance that should follow the rise in raw material.

We are told that higher prices can not be obtained for finished goods, and that where such prices are asked goods of reduced quality are substituted. This we know and deeply regret, because it is fast having the tendency to reduce the quality of British hosiery and losing for Great Britain that prestige which has so long been held and which should be honored. Such a procedure is daily increasing the competition, as other countries are advancing in the class of goods produced by them. We, in turn, are declining, and thus leveling qualities and creating a keener competition for the future than has been experienced in the past. Not a little of this lowering of qualities is due to the merchant trying to adhere to one price for the whole of a season on the pretext that his lists are printed and can not be altered. This is a serious question, for shopkeepers complain already that they can not get the superior article at any cost, and few customers would refuse to give a higher price for their accustomed qualities, knowing that such advance is due to circumstances over which the retailer or manufacturer has no control.

S. C. MCFARLAND,

NOTTINGHAM, January 5, 1900.

Consul.

AMERICAN BOOTS AND SHOES IN GREAT BRITAIN.

It is a well-known fact that American foot wear is not only the cheapest and best, but also the most stylish in the world. Its lasts and shapes are readily copied by English firms, who sell their goods as "American shapes."

Why is it that the American manufacturer does not do a better export trade? The following are a few of the drawbacks to which my attention has been called:

The American manufacturer is dependent upon the machine firms which sell the apparatus in use in shoe factories in the United States to almost every manufacturer in the civilized world. These concerns in many cases send instructors with the machines and teach foreign makers how shoes are made in the United States, and thus discourage would-be buyers.

Again, most American manufacturers have no experience in exporting goods, as is clearly shown by the way some of the best New England houses give the sole sale of their products to firms of very small standing, which sell only to an insignificant part of the retail trade. Jobbers of consequence would not buy of these at any price. They also obtain a large profit on American goods, and the consequence is that just about a fourth is sold of what could be disposed of if a legitimate profit on the goods were gained and they were pushed a little more.

Further, the agents of manufacturers who are ably represented in the local market are subjected to annoyance and have orders countermanded because the goods are not here in good season for delivery. This discourages large buyers from giving orders. In many cases, goods arrive from thirty to ninety days after the date they should be delivered, the consequence being that the order is canceled and the goods thrown back on the agent's hands; and as they can not always be disposed of at their full value, he must, in order to meet his payment, cut the prices. The manufacturer finds himself the loser in the end.

It is necessary to point out that in the United Kingdom the term "shoe" is applied only to foot wear the sides of which reach just under the ankle. "Boot" is the term used for foot wear reaching above the ankle, and this is the form of foot wear most widely used in this country. Boots are divided into three kinds, namely, lace, button, and elastic sides. American manufacturers should note the distinction between boots and shoes in Great Britain, and should

describe their goods accordingly; they will thus avoid misunderstanding and increase their sales.

The foregoing are some of the chief drawbacks to the United States boot and shoe export business.

There is plenty of room in Great Britain for American boots and shoes. Manufacturers should be personally represented by some able man who would visit the wholesale (not retail) trade with his samples two or three times a year at least. His samples should be, not as at home on a B or C last, but on a D or E last, on all goods from \$1 to \$2. These are the prices at which wholesale houses will most probably purchase. The American last is superior to any other; all that is wanted for the bulk of the British trade is a wide fit. Of course, the finer goods will be purchased by retail concerns in a moderate way, but no jobber will buy them.

Again, there is general complaint of the poor quality of sole leather put in the goods. Let our manufacturers use only the best stock for sole leather. On men's calf boots and shoes only what is called "blackening calf" should be used, and not green and fresh tanned upper stock. All children's, misses', and youths' boots and shoes must be made on an EE last, with a fat ankle; and they will also find a ready sale here if they have a two-lift heel and not a spring heel.

I may point out an advantage the American manufacturer has over his English competitor, who has the same machinery and leather to work with, viz, the system of union. The English boot and shoe union will allow an English manufacturer to turn out only a certain amount of goods per day as long as he uses machinery, thus limiting the output of the factory, whereas in America the manufacturer can produce all he is able, so long as (if his is a union factory) he pays union wages. The consequence is that more goods are made in two days in an American than in three days in an English factory. The American manufacturer has another advantage in confining himself to what is called here a speciality—manufacturing only ladies', misses', and children's or men's, boys', and youths' goods. Most English establishments make all of these under one roof and employ the same help on all goods, according to orders received. The consequence is that American labor can not only give better finish to their goods, but can also increase the output by doing the same work throughout the year.

American push and enterprise are greatly lacking here. The goods are sold in poor cartons, cases are charged for in packing, and many goods are sold in bulk—not in cartons at all. This can not compare with our method of packing goods.

Regarding rubbers, I may say that the United States Rubber

Company is ably represented and finds a ready sale for its goods in Great Britain. American rubbers are far lighter and more stylish than those of English manufacture, and are bound to sell where American leather goods are sold, as there are no other rubbers that fit an American boot or shoe properly on account of the lack of shape of other brands.

Finally, I would call attention to the customs of collection. English firms generally pay in ten, thirty, or ninety days; the usual trade discount is $2\frac{1}{2}$ per cent monthly and $1\frac{1}{4}$ per cent extra for net cash.

There is no reason why the American boot and shoe industry should not be more largely represented in Great Britain. There is a fair chance for enterprising firms to open stores in the larger towns in Great Britain, selling boots and shoes at a uniform and moderate price. Anyone embarking in this line must have patience and capital, as English people are slow to take up new ideas. He must study the tastes of his customers and not try to force upon them goods that are not wanted.

RICHARD WESTACOTT,

LONDON, *December 20, 1899.* *Vice and Acting Consul-General.*

CYCLE TRADE OF THE UNITED KINGDOM.

The following facts regarding the British cycle trade for 1899 are taken from a recent article in the *Irish Cyclist*, one of the ablest of the cycling journals.

For convenience, the trade is divided into three heads—cycle makers, tire makers, and tube makers.

CYCLE MAKERS.

65 firms, total capital.....	\$44, 063, 111
Less 9 firms in liquidation.....	4, 456, 760
Net capital.....	39, 606, 351
Total profits in 1898.....	2, 223, 353
Less loss by 13 firms.....	426, 067
Net profit in 1898.....	1, 797, 286
Total profits in 1899.....	778, 294
Less loss by 12 firms.....	243, 091
Net profit in 1899.....	535, 203

From this table it will be seen that, comparing the year 1899 with 1898, over 10 per cent of the firms mentioned in 1898 have gone into

liquidation, while of the remainder twelve firms have incurred a loss of \$243,091, leaving a net profit for the year of \$535,203, or 1.3 per cent.

TIRE MAKERS.

14 firms, total capital.....	\$33,887,653
Less 3 firms in liquidation.....	7,299,750
Net capital.....	26,587,903

The net profit in 1898 was \$2,226,160, while in 1899 it amounted to \$1,481,839. This net profit, however, is on the capital of firms still surviving and does not take into account the losses on the capital now in liquidation, which may, and probably will, far exceed the profit stated.

TUBE MAKERS.

14 firms, total capital.....	\$9,872,366
Less 3 firms in liquidation.....	874,183
Net capital.....	8,998,183

In 1898, these firms incurred a loss of \$14,181, and in 1899, of \$308,157. Regarding the loss in the tube trade, the writer says:

These figures are pitiful reading indeed. We wonder who are benefited by the fact that tubing was sold at a loss, all for the sake of saving a few shillings to cycle makers, who themselves incurred a loss.

The above figures deal with 65 cycle companies, 14 tire companies, and 14 tube companies, with a total capital of about \$90,000,000, or about two-thirds of the estimated total capital in the British cycle trade. The net profit on this \$90,000,000 amounted to \$1,708,885, or about 2 per cent, not taking into consideration the probable losses of the fifteen firms in liquidation, with an involved capital of \$12,630,693.

This unfortunate state of affairs is not attributed to any decline in the volume of business done, but "to the immense amount of direct and underhand price cutting," while "want of combination in the trade, excessive jealousies, and such unfortunate accidentals as the dumping of bankrupt stocks on the market have all helped to produce this state of affairs, and it is difficult to suggest a remedy."

"The fact," continues the article, "that the tire companies, as a whole, kept so near the profits of the former year is another index that the number of cycles sold must have been quite as many this season as last, and, as we said before, narrows the cause of the loss in the cycle trade down to the suicidal price cutting."

The writer concludes by expressing the belief that the trade will hold its own this year and gradually improve.

JOSHUA WILBOUR,
Consul.

DUBLIN, January 25, 1900.

RATTAN IN CORSET MANUFACTURE.

At the request of a New York manufacturing company,* a Department instruction was sent to certain consular officers in Europe, asking for information as to the use of rattan in corset manufacture. The publication of the reports has been delayed by the nonarrival of some of the series. The replies that have been received are given below.

AUSTRIA-HUNGARY.

VIENNA.

The consumption of rattan in the manufacture of corsets in Austria-Hungary is small, not more than 16,000 to 17,500 pounds being used annually. This supply comes from Germany, as there are no manufacturers in this country, and what little is employed is imported for the greater part by the corset manufacturers themselves and not by dealers in rattan, of whom only three in Vienna carry this article at all. One of these dealers told me that in the past year he had disposed of only about 150 pounds. The rattan is used only for the very cheapest kinds of corsets, in widths from one-eighth to two-fifths of an inch, and ranges in price from 15 to 22 cents a pound.

Most of the corsets are made with an imitation whalebone, produced from the horns of cattle. There are three factories in this Monarchy where this article is manufactured, and their annual production is 88,000, 66,000, and 22,000 pounds, respectively, a total of 176,000 pounds. There are two kinds of this bone, called, respectively, blond and black. The blond variety is made from the wet horns of Hungarian cattle and is much the better article. The black sort is made from horns imported from India, which are sent dry, as during the long transportation they would putrify. This latter kind possesses less elasticity.

The horns are pressed between heavy hot irons. The outer sides of the horns become more or less scorched, and the slabs sawn from these outer surfaces are much inferior in quality to those taken from the center, which are the best and dearest. The bones are cut from 6 to 20 inches long and three-sixteenths to five-sixteenths of an inch broad. The lengths from 12 to 20 inches are those in demand for corsets and sell, wholesale, the black for 25 cents and the blond for 60 cents a pound. Large quantities of these bones also come from France, because the manufacture here does not meet the demand.

There are not more than half a dozen corset factories in Austria-Hungary, and these turn out about 1,500,000 corsets annually. The

*To which ADVANCE SHEETS have been sent.

two largest ones are in Vienna (Leopold Landeis, VI Wallgasse 16, and Bachrich Brothers, I Salzthorgasse 1), and each can turn out about 1,500 a day on an average. The wholesale prices range from \$1 to \$20 a dozen, these being made from cotton goods costing from 10 cents to \$1 the yard. The retail prices are 20 per cent dearer. The favorite and best selling colors are gray, cream, and drab. The better ones are neatly decorated with fancy stitching in various colors, are edged with a narrow trimming at the top, and have half-inch broad cotton laces corresponding in tint to the stitching. Corsets can be bought in Vienna at retail as low as 35 kreutzers (16 cents).

A feature in Austrian-made corsets is a large hook sewed on in front well under the waist, beneath which the laces are passed in tying. Statistics as to exports are not obtainable, but it is estimated that about 10,000 pairs are annually shipped to eastern countries and South America.

Wages in the factories range from \$1 to \$6 a week, and working time is ten hours a day. Women are mainly employed. The fancy stitching and embroidering are given out.

Corset manufacturing in this country is very largely a home industry and in the hands of women. In Vienna alone, there are one hundred and seventy-four small firms, all of them under female names, and there is, perhaps, an equal number of women who work privately for customers. These small concerns make single corsets to order and supply the finest and most expensive class of goods.

The styles mostly in vogue are very long, though at present there is a demand for short "cycling" corsets. The steels for the front have four or five hooks, and are manufactured in Austria. The following is a scale of wholesale prices:

Description.	Price per gross.	
	Plain black.	Kid covered.
Ordinary quality:		
12 inches long, with 4 hooks.....	\$3.00	\$9.00
13½ inches long, with 4 hooks.....	3.25	9.25
(With 5 hooks, 12 cents more per gross.)		
Best quality, so-called French:		
12 inches long, with 4 hooks.....	4.25	10.25
13½ inches long, with 4 hooks.....	4.40	10.55
(With 5 hooks, 18 cents more per gross.)		
Hip springs:		
12 inches long, half an inch broad.....	.45	2.00
13½ inches long, half an inch broad.....	.58	3.15
12 inches long, 1 inch broad.....	.82	3.28
13½ inches long, 1 inch broad.....	1.14	3.57
Back steels:		
12 inches long, three-tenths of an inch broad.....	.37	1.54
13½ inches long, three-tenths of an inch broad.....	.45	1.75

The firm of Schneck & Kohnberger, I Schottenring 23, some time ago had a special "corset elastique" patented, which is made of rubber cloth and is maintained to be both hygienic and elegant, yielding easily to every movement of the body. There seems, however, to be no very large sale for this article.

The duty on corsets in Austria-Hungary is \$28.42 per 220 pounds. Rattan comes in free.

VIENNA, *April 19, 1899.*

CARL BAILEY HURST,
Consul-General.

PRAGUE.

The quantity of rattan used in the manufacture of corsets in this consular district amounts to about 2,000 kilograms (4,400 pounds) of 3 millimeters (0.1182 inch) thickness and about 1,000 kilograms (2,200 pounds) of 7 millimeters (0.2658 inch) thickness per annum. It is used in split condition.

The principal source of supply for Austria is Hamburg, but the manufacturers in this consular district buy their supply in Vienna. The price of rattan is from 70 to 75 florins (\$28 to \$30) per 100 kilograms (220 pounds) delivered at Prague. The countries where rattan can be purchased to the best advantage can not be ascertained here.

The names of the principal manufacturing firms in this consular district are Federer & Piesen, Obstgasse, Prague, and Leopold Gunzberger, Perlgasse, Prague.

Corset manufacture is carried on to a very limited extent only; it is, in fact, a so-called house industry. The most important person in the manufacture is the one who cuts the material (cotton and silk), as the fit of the finished article depends on his skill.

The sizes manufactured in this consular district are from 46 to 100 centimeters (15.7102 to 39.37 inches).

There are employed in the manufacture of corsets, besides the cutter, young girls and women, who usually work from the hours of 8 to 12 and 1 to 7 each day in winter and from 7 to 12 and 1 to 6 in summer.

The highest wages in this industry are paid to the cutter, who, if he be skillful, earns from 30 to 40 florins (\$12 to \$16) a week; but if not an expert at the business, from 15 to 25 florins (\$6 to \$10) a week. The other employees are paid by the piece and earn from 2.50 to 8 florins (\$1 to \$3.20) a week.

The wholesale price of corsets manufactured in this district is from 4.25 to 72 florins (\$1.70 to \$28.80) per dozen, according to the style in which they are made and finished; and the retail price is

from 45 kreutzers to 15 florins (18 cents to \$6) apiece. There are no statistics kept here as to the manufacture of corsets; there are none exported from Bohemia, but the finer qualities, called specialties, are imported into this district to quite an extent from France.

PRAGUE, *May 3, 1899.*

HUGO DONZELMANN,
Consul.

REICHENBERG.

Consul Mahin reports, under date of March 4, 1899, that there are no corset factories in his consular district.

BELGIUM.

ANTWERP.

Consul-General Lincoln writes, under date of April 6, 1899, that no manufacture of rattan in any form is carried on in his consular district, and that he knows of no manufacture of corsets on a commercial scale in the neighborhood.

BRUSSELS.

The Société Anonyme Coloniale Ratania, No. 67 rue Coenraets, Brussels, prepares rattan for use in the manufacture of corsets, but, so far as I have been able to ascertain from three important manufacturers and exporters of corsets, this article is not employed here in the manufacture of corsets.

The principal sources of supply of raw rattan on this market are India, Java, Borneo, and Kongo, the latter country contributing only a very small amount. The only source of supply in this district is from the above-mentioned association. This establishment employs in its various manufactures 2,000,000 kilograms (4,409,200 pounds) of rattan annually.

PRICES OF CORSET RATTAN.

Rattan prepared for use in the manufacture varies in price as follows, per kilogram (2.2046 pounds):

Size.		Price.	
<i>Millimeters.</i>	<i>Inch.</i>	<i>Francs.</i>	<i>Cents.</i>
3	0.1182	1.85	36
4	0.1576	1.80	35
5	0.1970	1.75	34
6	0.2364	1.65	32
7	0.2758	1.60	31
8	0.3152	1.60	31

There are three important manufacturers and exporters of corsets in this consular district:

P. Dutoict & Co., 31 rue du Pélican, Brussels.

Charles Kullman & Co., 191 Chaussée d'Anvers, Brussels.

Van Beirs-Casteels, 6 rue du Progres, Brussels.

LABOR AND WAGES.

Male and female labor is employed in the manufacture of corsets. Men are employed as cutters and receive 40 francs (\$7.72) per week. Women stitch and finish the corsets on sewing machines worked by foot power, and receive wages varying from 15 to 40 francs (\$2.90 to \$7.72) per week. Women from 18 to 35 years of age are chiefly employed.

Nine hours constitute a day's labor.

EXPORTATION.

There are no Government statistics kept as to the countries whither corsets are exported or the number exported. The records of this consulate show that during the past six years the exportation of corsets to the United States amounted to \$1,197,756.74, as follows:

Quarter ended December 31—

1893.....	\$208, 272. 30
1894.....	212, 901. 26
1895.....	218, 654. 09
1896.....	209, 010. 62
1897.....	208, 698. 30
1898.....	140, 220. 17
Total.....	<u>1, 197, 756. 74</u>

Corsets are exported from Brussels to very nearly all parts of the world. Messrs. P. Dutoict & Co. export principally to the United States, Australia, Canada, England, and Russia. The annual exports of this firm amount to 4,400,000 francs (\$849,200).

Prices per dozen vary from 30 to 360 francs (\$5.79 to \$69.48).

In submitting the above report to the Department, I beg to say that, although I exerted my best efforts toward securing data complying with the requirements of the circular, I had but meager success. Manufacturers to whom I addressed myself positively refused to give any detailed information as to the conditions under which they conducted their business, claiming that by so doing they would be giving away important secrets of their trade.

GEO. W. ROOSEVELT,

BRUSSELS, *March 25, 1899.*

Consul

FRANCE.

LYONS.

All the rattan used in Lyons is purchased in Paris, a great deal of it of Alphonse Ganet, 93 rue de Montreuil. The price paid is about 1½ francs (28 cents) per kilogram (2.2046 pounds). The price varies according to length. But very little whalebone or steel is used, more horn being employed than whalebone or rattan. The price of horn varies from 75 centimes to 6 francs (15 cents to \$1.15) the kilogram.

Dealers are averse to telling me the rates of wages, but I can say that they are from 1 to 2 francs (19 to 38 cents) a day for persons under 18 years of age and from 2½ to 4 francs (47 to 77 cents) for adults, the average being 3 francs (57 cents).

The following is a list of manufacturers in and around Lyons:

Mettey & Co., boulevard des Brotteaux.

Michéy Ressicaud, rue Paul Bert 204.

Perrin, rue Béarn 33.

Bois Bongrand, rue de l'Hotel de Ville 68.

Faivret, rue de l'Hotel de Ville 75.

Fournier, Quai de la Pêcherie 6.

René, rue de la République 45.

Guironnet, rue de Marseille 20.

Marion, boulevard des Brotteaux 14.

JOHN C. COVERT,
Consul.

LYONS, *April 8, 1899.*

RHEIMS.

The corset manufacturers of this consular district do not use rattan in their product. Tempered steel, in narrow, flexible strips, covered sometimes with paper and sometimes with linen, is now almost universally employed. Whalebone was formerly used, and is still to a limited extent.

The large manufacturers, like Stiegler & Co., of Bar-le-Duc, make corsets for the wholesale trade and for export. Stiegler & Co. and other manufacturers formerly exported quite extensively to the United States, but now Stiegler & Co. is the only exporting firm, and for the year ended June 30, 1898, the exportation had fallen to the amount of \$425.67. This year the amount will probably be less.

In large towns and in cities, there are always one or more establishments which have a specialty of making corsets to order. There

are in Rheims about a dozen of these small manufactories. The principal one, which has a large patronage, employs about thirty women and girls. They are employed by the day, and their wages are from 30 to 40 cents for from ten to twelve hours' work.

The corsets vary in price from 50 cents to \$10, and some are even higher. The rich and the well-to-do people patronize these establishments exclusively, for the reason that the corset is fitted artistically to the figure, and it is said gives a better appearance than a ready-made article.

RHEIMS, *May 26, 1899.*

WM. A. PRICKITT,
Consul.

GERMANY.

AIX LA CHAPELLE.

There are no corset manufactories in this consular district. I find on inquiring at shops that they keep in stock only French and German corsets. If the purchaser can not be suited or fitted, there is always an employee who can take measures, and, as a rule, the corsets are sent to private houses to be finished.

Retail prices marked on goods in windows range from 3 to 15 marks (75 cents to \$3); when made to order, the cost varies from \$3.50 to \$5. I asked two of the most extensive shopkeepers why they did not keep American corsets, as they are more chic and have better style. Both gave same reply: "We would like to see them; we have heard that they are more practical and very comfortable."

From general observation, this city would seem to be fertile ground for American corsets. The same rule applies to this line of goods as to others, viz, agents must visit Aix la Chapelle and show samples.

AIX LA CHAPELLE, *April 10, 1899.*

FRANK M. BRUNDAGE,
Consul.

STUTTGART.

Rattan is now scarcely used at all in the manufacture of corsets, except for the very lowest qualities. Most of the rattan used for corsets is supplied by H. C. Meyer, jr., in Harburg (near Hamburg), in splits of the various lengths and widths required by the manufacturers. The prices range from 1 mark per kilogram (23.8 cents per 2.2046 pounds) upwards, according to quality; the outside splits being higher in price than the inside ones. For the better grades of corsets, steel blades are principally used, and, for the very best, whalebones.

The addresses and names of corset manufacturers in Wurttemberg are:

Cannstatt.—Zoeppritz, Cantz & Ziegler, S. Lindauer & Co., and Gebrüder Uhlmann.

Stuttgart.—Brauburger & Karst.

Goeppingen.—Rosenthal, Fleischer & Co., Wilhelm Rosenthal, and E. H. Schnabel.

Esslingen.—Guggenheim & Co.

Heubach bei Gmünd.—Spiesshofer & Brauer and Schneider & Sohn.

Mögglingen bei Gmünd.—Allgoier & Erbe.

Wellendingen bei Rottweil.—Estermann & Co.

Leinsell bei Stuttgart.—Rundschuh & Uhlmann.

The cutting of the material is done by men, the sewing and other work by women; these work ten hours a day and receive wages of from 2.50 to 4 marks (59 to 95 cents) a day.

The wholesale prices of corsets range from 50 pfennigs to 20 marks (12 cents to \$4.76) apiece, according to quality, and retail prices vary from 60 pfennigs to 150 marks (14 cents to \$35) apiece, the latter being for fine articles.

Corsets are exported from Wurttemberg to almost all countries, with the exception of France and Belgium, on account of their own corset industry, and Russia, on account of the tariff.

South American countries are supplied with German corsets by English exporters.

The exports to the United States from this consular district for the calendar year 1898 amounted to \$81,997.21.

EDWARD H. OZMUN,

STUTTGART, *March 23, 1899.*

Consul.

SWITZERLAND.

There are no corset factories in this consular district; in fact, but very few in Switzerland, and none of them of great importance. Most of the corsets worn in this country come from Germany, France, England, and Belgium. The statistics for 1898 have not yet been published. During 1897, Germany exported \$127,611 worth of corsets to Switzerland; France, \$74,112 worth; England and Belgium, \$5,635 worth. The exports of corsets from Switzerland during that year amounted to \$1,484. In Switzerland, rattan is only used in cheap corsets. In the better quality, steel and whalebone are largely employed.

JAMES T. DuBois,

ST. GALL, *March 8, 1899.*

Consul-General.

GREAT BRITAIN.

Consul Day, of Bradford, on March 6, 1899, and Consul Stone, of Huddersfield, under date of March 14, 1899, inform the Department that there are no corset manufactories in their respective consular districts.

Consul Boyle, of Liverpool, on April 25, 1899, says:

There are no such manufactories in this consular district, but I am informed that the principal centers of manufacture in Great Britain are Bath, Portsea, Ipswich, and Landport. There seems to be but limited demand in Liverpool for such corsets. So far as I can learn, rattan corsets are seldom kept in stock in this city, and when an order is given by a customer it is sent on to a manufactory in one of the places named above.

INDUSTRIAL CONDITIONS IN BELGIUM.

According to the latest industrial reports, all branches of industry throughout this consular district show marked activity, notwithstanding the fact that in various industries manufacturers are hampered by increased price of raw material and coal and insufficiency of workmen. Among the industries affected which interest our commercial public may be mentioned—

COTTON SPINNING.

At Nivelles, near this city, the spinning mills are nearly at a standstill, due principally to a decision of the spinners to increase the price of thread, which has not been accepted by the weavers. In certain mills, not a pound of thread has been sold, and in consequence the stock has accumulated. To avoid shutting down the mills during the winter months, it has been unanimously agreed by the owners to diminish production, by keeping one-sixth of the spindles idle for the period of one month. Owners have agreed to certain provisions protecting the workmen from want during the time the mills are run at reduced force. Thread has regained its normal price, which remains firm. In other localities in this district, spinning and weaving mills, especially those of linen and jute, are in full activity. In linen mills, the only complaint heard is the scarcity of workmen. In the manila-jute industry there are some idle hands, owing to the high price and scarcity of the article

COAL.

Orders are abundant—too heavy for the supply. Although transportation trains are now running on Sundays, there is still much complaint as to insufficiency of freight cars. Prices remain high, with a tendency to further increase.

MATCHES.

The sale of matches without white sulphur increases daily. Orders are abundant, but the industry is also affected by the increase in price of raw material, which has sensibly decreased profits of manufacturers and will necessarily affect selling prices. Packages containing ten small boxes, each holding fifty matches, sell in Brussels for 10, 15, and 20 centimes (1.9, 2.8, and 3.8 cents) per package, according to quality. In view of the fact that manufacturers are now paying 8.50 francs (\$1.64) more per ton for coal than was paid last year; 12 francs (\$2.31) more per cubic meter for wood; 68 francs (\$13.12) per 100 kilograms (220.46 pounds) of paraffin, instead of 32 francs (\$6.17) paid last year; and 36 francs (\$6.94), instead of 24 francs (\$4.63) per 100 kilograms for pointes de Paris—the above-mentioned prices can not be maintained.

LACE.

This branch of industry is flourishing. A number of girls who heretofore made lace in their own homes have abandoned the work on account of the small amount earned, and now work in the large establishments at Alost and Brussels, where the daily wage varies from 1.10 to 1.40 francs (21.2 to 27 cents). One manufacturer pays a fixed salary of 1.50 francs (29.2 cents) per day, and when extra labor is required an additional 20 centimes (3.8 cents) for each extra hour, thus frequently allowing the workers an opportunity of earning 2.30 francs (44.3 cents) per day.

SOAP.

The prosperity of this industry, like that of many others in Belgium, is just now compromised by the increase in price of raw material. Foreign firms are endeavoring to capture the market by attractive advertisements of their soaps. Belgian manufacturers find it difficult to compete with them.

SUGAR.

The abundant rains during the latter part of September caused the beet roots to again put forth new leaves, which, in a great measure, consumed the saccharine richness of the plant. The beet

roots were sold at an average of 25 francs (\$4.82) per 1,000 kilograms (2,204.6 pounds). A number of the cultivators sold their beet roots by value of saccharine richness and not by weight. This system may become general, provided the analysis can be made on the place and not at the factory, as the cultivators are more or less suspicious.

QUARRIES.

With now and then an exception, the quarries in this district have sufficient orders ahead to keep their entire force occupied during the winter. Prices and salaries remain unchanged.

Efforts in the shape of recompense are made by owners to stimulate their laborers to sobriety and industry. The most noteworthy are those of Messrs. Jaumot & Bornet, of Ecaussines, who are now occupied in forming a relief association for the benefit of the laborers. They have also established a canteen near the quarries, where wine and beer in moderate quantities are sold to the laborers in order to combat excessive indulgence in drink. The society owning the quarries at Soignies offers as inducements to sobriety and diligence prizes in money and coal. Since March 1, 1899, this association has expended for this purpose more than 45,000 francs (\$8,685). In several instances, when a father and sons have deserved the recompense, as much as 314 francs (\$60) in money and 11,500 kilograms (25,352 pounds) of coal have been given to a single family.

A magnificent block of stone, weighing between 25,000 and 26,000 kilograms (55,000 and 57,200 pounds), was quarried at Neufvilles in November, and the occasion was commemorated by a festival.

GEO. W. ROOSEVELT,

BRUSSELS, *December 26, 1899.*

Consul.

HORSE BREEDING IN BELGIUM.

The breeding of fine draft horses is made a specialty in Belgium and is carried on extensively, with great success and profit. Colts from five to six months old sell for from \$60 to \$100, and at eighteen months from \$140 to \$180, while geldings from four to six years old bring from \$200 to \$350.

Liege is the principal horse market of the country, and every Monday the city is full of fine horses, and buyers are present from most of the countries of Europe. The farmers take great pride in their stock. The breeds most in favor are the Flemish and Norman; both are of about equal value.

The following clipping from *Le Patriote*, of Brussels, gives an

excellent account of the condition of the industry in Belgium and what the Government and provinces are doing for it:

The reports of the provincial commissions for agriculture are unanimous in stating that breeding of the big Belgian draft horse continues to be a very lucrative speculation. The prices of good horses are always very high.

The commercial movement with foreign countries in 1898 was as follows:

Country.	Imports.	Exports.
	<i>Head.</i>	<i>Head.</i>
Germany:		
Horses.....	1,176	15,445
Colts.....		1,129
England ..	21,643	313
France:		
Horses.....	7,717	3,015
Colts.....	595	124
Grand Duchy of Luxemburg:		
Horses.....	1,149	6,225
Colts.....		442
Holland:		
Horses.....	2,246	1,812
Colts.....	1,274	238
Russia.....	886	13
Switzerland.....		1,017
United States.....	6,080	
All other countries:		
Horses.....	158	140
Colts.....		64
Total	42,924	29,987

As may be seen, the importations exceed the exportations by 12,937 head. This excess has been continuous since 1893, but it must be attributed chiefly to the importation into Belgium of slaughter horses from England.

The provincial regulations relative to the betterment of the different breeds of horses continue to give good results. During the year 1898, the carrying out of these regulations caused a total expenditure of 272,691.41 francs (\$52,629.44), of which the Government paid 163,181.90 francs (\$31,494.11) and the provinces 109,509.51 francs (\$21,135.33).

Besides this, the Government granted to the national society for the breeding of the Belgian draft horse a subsidy of 20,000 francs (\$3,860) and to the society for the encouragement of the breeding of half-breeds a sum of 10,000 francs (\$1,930). The sum of 24,000 francs (\$4,632) was inserted in the budget, to be distributed in national premiums to owners of choice stallions of native breeds. The Government has consequently assumed in 1898 the payment of a total sum of more than 217,000 francs (\$41,881) as encouragement for the breeding of horses.

The following table gives the number of horses imported from the respective countries for the years given, and the figures for the United States are good; but a large number of these animals were for the slaughterhouse.

Country.	1898.	1897.	1896.
England.....	21,643	22,454	16,577
United States.....	6,080	4,183	2,598
France	7,717	7,954	6,525

Great care is taken to keep up the high standing of the breeds, for all stallions must be licensed by the Government.

But little attention is paid to the breeding of roadsters or saddle horses. These are principally imported from England and are quite expensive. I think there might be a good opening here for these classes from the United States. However, great care should be taken to send only the best horses, for the standing of American animals has been injured by the shipment to this country of inferior specimens.

ALFRED A. WINSLOW,

LIEGE, *December 27, 1899.*

Consul.

SAN JOSÉ SCALE IN GERMANY.

Nothing has been said of this insect for months in German papers. It has not yet made its *début* in a live condition in the Fatherland, thus confirming the opinion of experts that the climatic conditions of Germany are not suited to its perpetuation; but, while the false alarm concerning the introduction and ravages of the San José scale has vanished, its ill effects in the nature of administrative measures against the import of American fruit have continued, and the hardship of these proscriptive ordinances are making themselves so acutely felt that German trade circles and consumers are beginning to protest. The chamber of commerce of the city of Hamburg (one of the most important trade bodies of Germany), in its lately published annual report, says on this subject:

The station which last year was opened in this city for the purpose of investigating the presence of the San José scale on American fruit has a laboratory where two scientifically trained experts, with fourteen assistants, have steadily pursued these investigations in the most circumspect manner. While there may not be any objection to examining "raw fruit," the continuation of investigations in regard to "dried fruits" must be considered an utterly unnecessary hindrance to trade. The sanitary experts, whom the imperial German department of health, as well as the Belgian Government, sent last year to California, have fully confirmed the statements made by German fruit importers that the drying methods in use in the United States effectually kill the insects. Therefore, the scales found on dried fruit from America were dead. The trade suffers great damage from the examination, stricter here than elsewhere, and this chamber of commerce regrets that this unnecessary annoyance and harmful practice was not at once discontinued when the facts became known.

We have sent an urgent petition to the authorities praying for immediate action.

I have also seen in German papers articles of similar import, wherein the damage to German manufacturers of cider and of jam caused by these repressive orders was pointed out. It is to be expected that these home complaints will have the desired effect.

The present German tariff rate on canned fruits, preserves, and sauces is so inordinately high as to almost shut out this line of American staples. An immense export trade from our country to Germany would result if the present duty were lowered by one-half. This would be hailed with delight by the middle class and the working class of Germany's population, to whom our canned fruits, vegetables, sauces, and bivalves would be a welcome luxury.

FRANKFORT, *January 24, 1900.*

SIMON W. HANAUER,
Vice-Consul-General.

MUSIC LIBRARY IN GENEVA.

A rather unique enterprise of certain music dealers in Geneva may be of interest in the United States.

The dealers in question keep very large stocks of all sorts of classical and popular music, both instrumental and vocal, to all of which access may be had by students and others for a subscription fee of from 50 cents a month up. In other words, these dealers in this particular operate their music stores on the plan of a circulating library. Subscribers may take from three to twelve pieces of music at a time, and may change as often as they please. To students who desire to have access to a large and varied repertoire of music and who can not afford to buy at will, this admirable plan comes as a benison, and the dealers who have inaugurated it in Geneva are being well repaid for their enterprise, not only by the patronage of the students, but by a large and general clientele. The subscription fees are as follows:

Description.	1 month.	1 year.
3 pieces of music at a time.....	\$0.50	\$2.40
5 pieces of music at a time.....	.70	3.00
8 pieces of music at a time.....	.90	4.00
12 pieces of music at a time.....	1.10	5.00

Subscribers are held responsible for damages done to the music beyond ordinary wear and tear.

I do not know whether or not an enterprise of this character exists in the United States. If not, it seems to me that it might be generally and advantageously put into use in our larger cities. It might even be made a feature of circulating libraries.

BENJ. H. RIDGELY,
Consul.

GENEVA, *January 19, 1900.*

No. 235—5.

PURIFICATION OF THE SEINE AND SEWAGE FARMING.*

The studies and experiments begun in 1864 with a view to solve the problem of purifying the waters of the River Seine have resulted in complete success, as demonstrated at Gennevilliers, a suburb of Paris on the banks of the Seine.

The engineers of the city of Paris have accomplished the purification of the sewer water by means of porous earth and vegetation—that is to say, passing the water through land under cultivation and emptying it, thus filtered, again into the river, comparatively free from microbes or organic matter.

In 1866–1868, the sewer water emanating from that part of Paris located on the left bank of the Seine was conducted direct to Gennevilliers, and a trial was begun over 6 hectares (15 acres) of land purchased by the city.

The work, interrupted in 1870, was renewed in 1872, and from that time until now there has been a steadily increasing demand from cultivators to be furnished with the sewer water for use on their land. The total distribution for the year 1898 was 38,148,300 cubic meters (1,347,245,363 cubic feet).

The next experiments were made at Achères.

By authority of the law of 1894, the city of Paris was authorized to make a loan, necessary for the completion of the work of purifying the Seine within five years. Since then, the power houses have been enlarged, others created, and the lands of Mery-Pierrelaye and Carrieres-Triel have been included in the system.

The following table shows the acreage in the different localities provided with the necessary machines and canals for distribution:

Place.	Municipal.	Free.	Total.
	<i>Hectares.</i>	<i>Hectares.</i>	<i>Hectares.</i>
Grennevilliers.....		900	900
Achères.....	1,000		1,000
Mery.....	520	1,630	2,150
Carrieres.....	100	850	950
Total.....	1,620	3,380	5,000
Total in acres.....	4,001	8,349	12,350

This represents an annual employment of 200,000,000 cubic meters (7,063,200,000 cubic feet) of sewer water.

* This report was made in answer to inquiries by a resident of Missouri, to whom ADVANCE SHEETS have been sent.

The land owned by the municipal authorities comprises 1,620 hectares (4,001 acres), which is let out to individuals.

The free distribution covers 3,380 hectares (8,349 acres). The 900 hectares of Gennevilliers are now actually being supplied; and out of the remaining 2,480 hectares (6,125 acres) demands have already been made for the delivery of water on 1,800 hectares (4,446 acres), leaving but 680 hectares (1,680 acres) unapplied for.

On account of the proximity of Gennevilliers to the city of Paris and the multitude of its subdivisions, green or small vegetables are chiefly cultivated; whereas, Achères being farther from Paris and the land being leased in large tracts, beets, potatoes, and grass are grown. It is expected that at Mery-Pierrelaye, the raising of cattle and dairy interests will be most feasible.

The following figures will show the total cost of the work:

	Francs.
Gennevilliers (begun thirty years ago).....	6,000,000 = \$1,158,000
Achères (finished in 1895).....	15,000,000 = 2,895,000
Extension of works and additional canalization.....	17,000,000 = 3,281,000
Total.....	38,000,000 = 7,334,000

PARIS, *December 21, 1899.*

JOHN K. GOWDY,
Consul-General.

ELECTRIC STREET CARS IN FRANKFORT.

The old horse-car system of the city of Frankfort is being converted into one of which electricity is the motive power. One line connecting the suburb of Sachsenhausen—across the River Main—with Frankfort has been in operation for several months, and, as the preparations for changing most of the other lines are nearly completed, the old horse car will soon be a thing of the past. The motive power is supplied by overground wires.

The pillars, constructed of iron and quite ornamental, are placed at the edge of the sidewalks.

Precautions have been taken to prevent accidents as much as possible. Should an overhead wire break, an ingenious but simple device renders the fallen wire at once harmless; otherwise, the powerful current of 500 volts would become very dangerous to human beings and animals who would come in contact with it.

When necessary repairs have to be made or when the fire department is at work, so-called "Ausschalter," which are provided about every 1,600 feet, can be made to interrupt the operation of the line for only a certain distance.

If, through wrong switching or for other reasons, the power of

the normal current in the car is increased so that ignition of the wooden parts would result, resort is had to crosscuts in protected parts, filled with lead, which melts as soon as the normal power of the current is increased.

On the roof of the car is a magnetic spark extinguisher. Provision is also made against damage by lightning by suitable conductors.

The great electrical firm of Siemens & Halske has the work in hand, and all modern appliances are made use of; so that, if care is taken to keep these in working order, fatal accidents should not occur.

RICHARD GUENTHER,
Consul-General.

FRANKFORT, *January 15, 1900.*

ELECTRICAL DEVELOPMENT IN CANADA.

Electrical industries in Canada have fully shared in the prosperity now felt throughout the Dominion. According to the Canadian Electrical News, the leading manufacturing and supply companies report that the volume of their business for 1899 exceeded by upwards of 75 per cent the business done during 1898. More than half the output of these companies was applied to the extension and improvement of existing plants, the bulk of the machinery sold being for lighting and power purposes. There was but little new railway construction done during the year, but a considerable amount of apparatus was required for extensions and improvements.

Improvement and development have been quite as marked in the commercial as in the mechanical field. The business done has been so large and so profitable that the stock of the two leading manufacturing companies has risen fifty points during the year, and further advances are predicted. The workshops of the electrical manufacturing companies are said to be crowded with orders to such an extent that no promise of delivery at a specified time can be made, and prices are firmly maintained.

The utilization of water power for the generation of electricity has been taken up with energy throughout the Dominion. This new medium of power transmission has made possible the harnessing of Canada's almost endless water powers, and the cheapened production resulting accounts in part for the rapid growth in Canadian manufactures.

HARLAN W. BRUSH,
Consul.

NIAGARA FALLS, *January 20, 1900.*

CASSAREEP IN LATIN AMERICA. .

In compliance with the request of a St. Louis firm,* a Department instruction, dated August 26, 1899, was sent to certain consular officers in Central and South America, asking for information relative to the manufacture of cassareep from cassava root. The answers received follow.

GUATEMALA.

Acting Consul-General James sends from Guatemala, October 5, 1899, copy of a letter from Mr. Frank C. Dennis, consular agent at Livingston, treating of the subject.

Mr. Dennis says:

I have made inquiries regarding this product, and, while no one knows anything of the product "cassareep," the "cassava" root is very common—whether the bitter cassava or not, I am unable to say—still, it is the opinion of all the Caribs here that the cassava in common use among that race on this coast is the kind spoken of, and if any of it is wanted one only has to guarantee to buy it at a fixed price, and I can order an almost unlimited quantity planted.

From my window, as I write, I can see several thousand plants of cassava. I would suggest that a sample of the so-called bitter-cassava root and a sample of cassareep be sent me, so that I may say definitely if the article is the same as that which grows here. Even if it is not, and is only a member of the cassava family, any amount could be produced here by furnishing the seed roots.

This cassava is not exported; it is planted only by the Caribs and is used by them to make their cassava bread, being ground on mahogany boards with sharp stones let into them, then placed into a long, sausage-like affair called "wowler" (Carib for snake), about 7 feet long by 4 inches in diameter, and the juice expressed. This juice develops prussic acid and also leaves a sediment which is a fine quality of starch, which is used on all parts of the coast for stiffening clothes.

If the kind of cassava wanted is the same as grows here, or anything like it, a new industry could be opened for this Republic, as well as serving to supply our manufacturers at home.

In a subsequent letter, Mr. Dennis adds:

I have made a trip along the coast in a canoe and have gathered more information from the older Caribs regarding the product. I can only confirm my first report. I easily obtained samples of the

*To which ADVANCE SHEETS have been sent.

cassareep, or molasses of the cassava root. Any quantity can be procured in this vicinity, provided proper encouragement is given to the industry, similar to that given by English and German merchants.

Cassava and fish form the chief articles of food of the Caribs, and the former is cultivated only in sufficient quantities for their daily needs, as a vegetable to eat with their fish, to make their strange bread, and to make the cassareep, which forms their only sweet.

The root grows like sweet potato or yam (ñáme), requires no attention whatever, is very prolific, and, if wanted, can be produced in any quantity and at a very moderate price.

I shall be pleased to obtain and transmit any further information that may be required.

HONDURAS.

Under date of September 15, 1899, Consul Johnston writes from Utila:

I do not find cassareep manufactured or produced either on the islands or north coast of Honduras. There is great abundance of cassava in this part of the country, some roots weighing 100 pounds. The only use made of the bitter root is to make starch. It is of rapid growth and matures in about one year. It keeps well out of the ground and could be shipped to the United States without trouble. It may be that sweet cassava is used for cassareep, as it is claimed here that the juice of the bitter cassava is very poisonous. Both grow in abundance, but the bitter is much larger and more robust.

Consul Johnston adds, on October 2:

Since I made the last report, I learn that on the coast they make starch out of the bitter cassava, and in making the starch obtain a liquid which is poisonous; but they boil it and use it with their food. I have samples of both and could forward them to parties interested.

ARGENTINE REPUBLIC.

Consul Mayer writes from Buenos Ayres, October 25, 1899:

Cassava is a native of the Argentine Republic. It has a large, fleshy, oblong, tuberous root, often weighing 30 pounds, and full of a wheyish, venomous juice. The stems are white, crooked, brittle, jointed, pithy, usually 6 or 7 feet high, with a smooth, white bark.

This plant, formerly designated by botanists as the *Jatropha manihot*, furnishes a large amount of food to the inhabitants of South

America, under the name of mandioca, tapioca, or cassava starch. There are two distinct species of the plant. The root of one is fusiform, brown externally, not exceeding 6 ounces in weight, with a sweet taste, and may be eaten with impunity; it is termed sweet cassava. The root of the other and more common variety is much larger, knotty, black externally, and contains a milky and poisonous bitter juice; this is called bitter cassava, and contains free hydrocyanic acid, starch, an organic salt of magnesia, saccharine matter, a bitter principle, a crystallizable fatty matter, vegetable osmazome, phosphate of lime, and lignin. Each of these plants furnishes a considerable quantity of starch.

Tapioca is prepared from the bitter cassava. The large, fleshy, and tuberous root is reduced to a pulp, which is washed with cold water in funnel-shaped mat filters. The starch is allowed to subside in the milky fluid which passes through, and is then elutriated in the usual manner, and finally converted into the granular form by drying it on hot plates. Should any of the volatile poisonous principle remain in the meal previous to drying, the heat employed for that purpose entirely removes it.

Tapioca is a very pure starch, in the form of irregular, warty grains, seldom larger than a pea, white, tasteless, and inodorous. Boiling water dissolves it almost entirely, or, if in small proportion to the tapioca, it forms with it a translucent, tasteless jelly, firmer than is made with most varieties of starch. Under the microscope it is found to consist of aggregated starch globules, about the two-thousandth of an inch in diameter, partly broken, partly entire.

BRAZIL.

Consul Furniss, of Bahia, on October 9, 1899, reports that after a thorough investigation he finds that neither the large drug stores nor the exporters have any knowledge of the bitter root of cassava or of the cooked product designated as cassareep. He adds:

All medicinal plants and roots are exported from this district in the crude form, and if bitter cassava root is found, it must be under some entirely different name, as no one seems to recognize it under that name or the name of the product.

The following, dated October 19, 1899, has been received from Vice-Consul Krause, of Pernambuco:

The juice of the bitter cassava or mandioca root—said juice being here called “manipueira”—is used in this part of Brazil only as a remedy for beri-beri, and is not boiled to make a condiment for food,

as is the custom in the West Indian Islands and elsewhere. Mandioca is used here to make "farinha," something resembling white sawdust. The farinha is made by grinding the root in the raw state and passing it through a press to extract the juice. The juice being extracted, the mandioca is spread inside an oven to dry—and the farinha is ready. The juice is then placed in a vessel to allow the flour to settle in the bottom, and after the water is emptied starch is made of the flour. Mandioca is extensively cultivated in this consular district, as farinha forms the base of the food used by the population here.

Vice-Consul Lawrence, of Santos, under date of December 20, 1899, says:

Cassava, or cassava flour, is prepared from the mandioca root, the latter being ground in its raw state and the liquid extracted by pressure, when the flour is slightly roasted in open iron pans. It is then fit for food and is called in Portuguese "farinha de mandioca."

Cassareep is the liquid extract above mentioned, and in its raw state is poisonous. The poisonous quality it loses through evaporation by heat, going through this process in two ways to make it fit for use—one, by being left in the sun in open dishes for several days. When prepared in this manner and properly mixed with green peppers (malaguetas), it makes a sauce which is known in northern South America (French Guiana and the Amazonas territory) as "tucupy." When prepared over fire, it takes a dark color. Made into sauce as above, it is similar in taste and color to Worcestershire sauce, and is called "tucupy pixuna." Tucupy is used extensively in the northern parts of Brazil and French Guiana as a sauce, especially for fish. In this district, mandioca is grown to produce the flour for local consumption only; it is not exported. I can not find any house, foreign or native, that exports mandioca. There is one large farm—Fazenda Boa-Vista, Comarca do Cabo, Recife, Pernambuco—the proprietor of which may be able to give some advice as to how cassava, or cassareep, may be bought direct.

BRITISH GUIANA.

Consul Moulton, of Demerara, on September 15, 1899, writes:

Bitter cassava is cultivated to a limited extent to supply the local demand for the starch manufactured from it. Cassareep being a by-product, can not be profitably made unless a market can be found for cassava starch.

There are two or three very small and primitive mills in this colony with a capacity of one or two barrels of starch per day, and

they are often idle for six months at a time. If a mill were operated solely for the manufacture of cassareep, the article could not be sold for less than \$8 per gallon. If the starch could find a market, the by-product could be sold for \$4 for a first-class article.

There are practically no manufacturers of cassareep in the district.

Those interested might correspond with E. Elcock, care of Haggin & Co.; Mr. Pearson, care of Demerara Railway Company—both of Georgetown; and "Corn Depot," New Amsterdam, Berbice, British Guiana; or with Smith Bros. & Co. and Booker Bros. & Co., of this city, retail grocers; Brodie & Rainer and Scott & Co., druggists.

VENEZUELA.

Consul Goldschmidt, of La Guayra, under date of November 21, 1899, says that no cassareep is manufactured in Venezuela. In searching for information, he has been told that this product is manufactured in Mexico, in the districts of Soconusco, Chiapas, and Oajaca.

Consul Plumacher transmits from Maracaibo, under date of September 28, 1899, copy of a report by Messrs. A. Cook & Co., chemists, to whom he applied for information. The letter says:

We do not know and never heard of a product called cassareep, but cassava is prepared to a certain extent in the interior towns by macerating the root of *Yucca dulce*. After this is freed from all impurities through boiling, a meal is extracted, which is compressed between heated sheets of iron.

There is also a sirup that is used among the Indians and natives as a blood purifier. This is prepared by a long boiling of the peeled root; after the liquid is strained, the sugar is added to make the sirup.

The meal of the yucca is called in English "arrowroot."

The following, dated Puerto Cabello, December 1, 1899, has been received from Consul Ellsworth:

Cassareep is the extract of the bitter root of yucca, and has been thrown away by growers in this country. The remainder of the yucca is cooked and made into what is known here as cassava, a considerable quantity being manufactured in this vicinity. The extract of it is called in Spanish "yoré."

The virtues of cassareep are not known to the manufacturers of cassava; it is pronounced poisonous.

Mr. Fred R. Bartlett, American citizen, residing in Puerto Cabello, Venezuela, would be pleased to correspond with interested parties in regard to this matter.

The yucca grows in abundance here.

NOTES FROM NORTHERN BRAZIL.

The valley of the Amazon still remains almost unexplored. What has been done has been accomplished in great measure by Europeans. I can but repeat my advice to progressive Americans to enter this field. We now control a good portion of the imports both of Manaos and Para, and supply large quantities of machinery; but we should do much more, for the trade of northern Brazil is growing all the time.

Para has doubled its population in the last four years, and Manaos has increased its commerce 100 per cent within half that time.

A Belgian-French syndicate is directing its attention to the Upper Amazon. Its name is "Comptoir Colonial Français," the main offices being in Paris, with branch office at Para. Another is to be established at Manaos.

The first transaction of the syndicate was the purchase of the rubber estates known as "Casa do Javary," comprising twenty-one rubber fields beginning at the mouth of the Itequary River. I am informed that the price paid was 5,000 contos, or 5,000,000 milreis, which at present exchange is about \$720,000. A cash payment was made of £75,000 (\$365,000). The company is capitalized at \$2,000,000. I am also informed that the managers have made an offer of \$720,000 for rubber districts on the Ituy River, an affluent of the Javary, extending for 18 miles on both banks of the river, but the proposal has been refused.

Advance agents of a London syndicate with a capital of £10,000,000 (\$48,665,000) are also examining the rubber fields, and others, representing European interests, are to be seen all along the Upper Amazon. The United States is as much interested in the rubber industry as any of those countries, and American capital is generally eager for safe investment with liberal returns; and I can not see why so little attention is given to the possibilities of the Amazon Valley. If European capitalists are allowed to control this business, it will be detrimental to our interests. The demand for rubber is constantly growing, while the production is hardly equaling that of past years. After a while, those who have not foreseen the necessity of securing the raw material may find themselves at the mercy of the owners of the rubber fields.

Manaos, 1,000 miles up the Amazon, has a population conservatively estimated at between 40,000 and 50,000, and is the depot for all the rubber gathered in the upper valley. Para firms have branch houses here. The city lacks, however, two essential elements of prosperity—banking facilities and telegraphic communications with the outside world. There is a cable between Para and Manaos, but

the Amazon current is so strong that the cable is not in working order one month in the year. Trees and other obstructions break it frequently, and it is constantly undergoing repairs. Both Government and merchants are anxious to establish good telegraphic service. To this end, the Amazonas State government has entered into an arrangement with the Para State government to build a telegraph line. It will be an expensive work, but no doubt will pay, with the Government subsidy. The present cable company receives quite a large subsidy. The new line has been started and about 180 miles have already been finished.

There is not a single bank in Manaus, and long credits are attended with great inconveniences. At present, money is scarce there. Para banks make a specialty of loans.

Rubber is a leading source of State revenue and pays heavy taxes.

The concessionaire of the Rio Madeira Railroad has sold out to a Manaus firm, which is to raise the capital in six months. There is some doubt as to whether the money can be raised. The Manaus State government is so anxious for this improvement that, although the road will be in Matto Grosso territory, it will give a liberal subsidy to the firm undertaking the work, offering \$150,000 for a first payment. This road, which will facilitate the exit of the Bolivian production of rubber, will be an important undertaking. The failure of previous attempts to build it seems to be due to the exclusive employment by the contractors of foreign workingmen, who can not stand the climate. If the contractor would engage natives to do the unskilled labor, he would succeed. The men who actually superintend the work are not particularly subject to fevers, and with a little care in importing proper food the enterprise can be successfully accomplished. It is certain that the road will be finished by someone—I hope by an American company. It will be remunerative.

K. K. KENNEDAY,

PARA, *January 5, 1900.*

Consul.

TARIFF IN PARAGUAY.

The following, dated December 4, 1899, has been received from Consul Ruffin, of Asuncion.

I transmit translation of the new custom-house law for 1900.

Coal oil (American product), telegraph wire, fencing wire, steel and iron rails, sewing machines, windmills, agricultural implements, machinery, engines, etc., remain on the free list.

The text of the law follows:

ARTICLE I. From the 1st of January, 1900, there will be charged on the following articles of foreign production:

Articles.	Unit.	Duty.	
		Paper.	U. S. currency.
		<i>Pesos.</i>	<i>Cents.</i>
Olives, in any kind of box.....	Kilogram.....	0.02	0.25
Caper bush, in any kind of box.....	do.....	.04	0.5
Anchovies, in any kind of box.....	do.....	.04	0.5
Herring, in any kind of box.....	do.....	.03	0.37
Tunny fish, in any kind of box.....	do.....	.06	0.75
Refined sugar in general.....	do.....	.10	1.25
Unrefined sugar in general.....	do.....	.05	0.62
Biscuits, etc.....	do.....	.06	0.75
Grained coffee.....	do.....	.03	0.37
Ground coffee in general.....	do.....	.05	0.62
Shrimps, in any kind of box.....	do.....	.06	0.75
Conserved meat, in any kind of box.....	do.....	.02	0.25
Peruvian root, in any kind of box.....	do.....	.15	1.87
Chocolate, in any kind of box.....	do.....	.10	1.25
Plums, in any kind of box.....	do.....	.01	0.12
Sweets, caramels, bonbons (not medicinal), in general.....	do.....	.05	0.62
Preserves of all classes, in general, not specified in the present law.....	do.....	.03	0.37
Conserves of all kinds, with fruits.....	do.....	.06	0.75
Dates, in any kind of box.....	do.....	.03	0.37
Sweets, in any kind of box.....	do.....	.01	0.12
Extracts of beef, in any kind of box.....	do.....	.10	1.25
Wooden matches.....		1.60	20
Wax matches and matches of other substances.....	Each box of 50 wax tapers.....	.01	0.12
Colors, composed of simple sirup or water.....	Kilogram.....	.06	0.75
Colors, composed of alcohol.....	do.....	.08	1
Lard, in any kind of box.....	do.....	.02	0.25
Dried liver, in any kind of box.....	do.....	.03	0.37
Mushrooms, in any kind of box.....	do.....	.02	0.25
Mushrooms (conserved), in any kind of box.....	do.....	.06	0.75
Hams.....	do.....	.06	0.75
Condensed milk.....	do.....	.05	0.62
Conserved tongue.....	do.....	.02	0.25
Butter.....	do.....	.08	1
Apples and other dried fruits.....	do.....	.01	0.12
Mazacotes.....	do.....	.02	0.25
Martadella.....	do.....	.10	1.25
Mustard, in paste or powder.....	do.....	.05	0.62
Playing cards in general.....	do.....	.50	6.25
Nuts.....	Kilogram.....	.01	0.12
Oysters.....	do.....	.05	0.62
Raisins.....	do.....	.02	0.25
Paste of anchovy, peanuts, and tomatoes.....	do.....	.02	0.25
Cheese, in cans.....	do.....	.02	0.25
English sauce (Worcester) of anchovy.....	do.....	.05	0.62
Sauce, of tomatoes.....	do.....	.03	0.37
Sardines in general.....	do.....	.10	1.25
Prepared soup, in cans.....	do.....	.02	0.25
Prepared tobacco.....	do.....	.25	2.5
Tapioca and sago palm, in packages.....	do.....	.10	1.25
Tea in general.....	do.....	.05	0.62
Fruits, in cans or jars.....	do.....	.08	1
Wax candles, stearin, sperm in general.....	do.....	.02	0.25
Brandy: *			
30° and over.....	Liter.....	.20	2.5
Of less grade.....	do.....	.10	1.25
Of anise, in casks or demijohns.....	do.....	.10	1.25

* Brandy is also included in the 80 per cent ad valorem duties.

Articles.	Unit.	Duty.	
		Paper.	U. S. currency.
		<i>Pesos.</i>	<i>Cents.</i>
Wormwood in general.....	Liter.....	0.50	6.25
Arrack.....	do.....	.20	2.5
Birr.....	do.....	.20	2.5
Bitters, Angostura.....	Bottle.....	.20	2.5
Bitters, all other.....	Liter.....	.30	3.75
Beer in general.....	do.....	.10	1.25
Champagne in general.....	do.....	.50	6.25
Citron in general.....	do.....	.10	1.25
Cognac in general.....	do.....	.30	3.75
Gin in general.....	do.....	.10	1.25
Grappa.....	do.....	.30	3.75
Guindodo in general.....	do.....	.20	2.5
Kirschwasser.....	do.....	.30	3.75
Kümmel.....	do.....	.30	3.75
Liqueurs:			
Of Chartreuse.....	do.....	.50	6.25
Other kinds.....	do.....	.30	3.75
Punch or rum in general.....	do.....	.30	3.75
Cooling beverages.....	do.....	.10	1.25
Common wines—French, Italian, Spanish, and Argentine—in casks.....	do.....	.10	1.25
Wines of same kind and from same places, bottled.....	Bottle.....	.20	2.5
Fine wines:			
In casks.....	Liter.....	.25	3.12
Bottled.....	Bottle.....	.50	6.25
By common wines in casks is to be understood those which do not pass more than 10 cents appraisement a liter, and by common wine, bottled, not more than \$4 (50 cents gold) paper a box of 1 dozen.			
Vermuth in general.....	Liter.....	.20	2.5
Vinegar in general.....	do.....	.05	0.62
Whisky in general.....	do.....	.30	3.75
Oil, essential:			
Ordinary and regular.....	do.....	.30	3.75
Fine.....	do.....	.40	5
Toilet waters in general.....	do.....	.20	2.5
Cushions, purses, small bags, perfumed, in general.....	Kilogram.....	1.00	12.5
Barber brilliantina.....	Flask.....	.02	0.25
Cold cream in general.....	Flask.....	.02	0.25
Perfumed colors.....	Kilogram.....	4.00	50
Cosmetics in general.....	do.....	.30	3.75
Ordinary handkerchief extracts.....	Liter.....	.50	6.25
Fine extracts in general.....	do.....	.60	7.5
Smelling soaps:			
Ordinary.....	Kilogram.....	.20	2.5
Fine.....	do.....	.30	3.75
Opiates for the teeth.....	Flask.....	.02	0.25
Soap paste for barbers.....	do.....	.02	0.25
Rice powder for face:			
Ordinary.....	do.....	.20	2.5
Fine.....	do.....	.20	2.5
Perfumed toilet pomades.....	do.....	.30	3.75
Water squirts (small things with perfumed water for squirting in carnivals).....	do.....	.01	0.12
Oriental tonic.....	Flask.....	.03	0.37
Aromatic vinegar in general.....	Liter.....	.02	0.25
Ayer's hair vigor.....	Flask.....	.03	0.37

ART. II. There are excepted from this list the following articles, which will pay a duty by means of stamps fixed upon the boxes:

	Pesos.	Cents.
Cigarettes in general in parcels of 14 cigarettes.....per package...	0.10	=1.25
(Fractions are treated as entire boxes.)		
Habana cigars or their imitations.....each...	.05	=0.62
Cigars from other points.....do.....	.02	=0.25

ART. III. For the collection of the duties created by this law, the quantities or weights used for the liquidation of the customs duties will serve as a basis.

ART. IV. Articles of national production will pay the following, in stamps fixed on the boxes:

Articles.	Unit.	Duty.	
		Paper.	U. S. currency.
Cigarettes (each package of 14 cigarettes) worth:		Pesos.	Cents.
From 5 to 20 cents Paraguayan for the consumer.....	Package...	0.01	0.12
From 21 to 40 cents Paraguayan for the consumer.....	do	.02	0.25
From 41 to 60 cents Paraguayan for the consumer.....	do	.03	0.37
From 61 to 80 cents Paraguayan for the consumer.....	do	.04	0.5
Cigars in boxes (each box of 100 cigars):			
To \$2 Paraguayan a box for the consumer.....	Box	.02	0.12
From \$2 to \$4 Paraguayan a box for the consumer.....	do	.04	0.5
From \$4 to \$6 Paraguayan a box for the consumer.....	do	.06	0.62
From \$6 to \$8 Paraguayan a box for the consumer.....	do	.08	1
From \$8 to \$10 Paraguayan a box for the consumer.....	do	.10	1.25
From \$10 to \$15 Paraguayan a box for the consumer.....	do	.15	1.87
From \$15 to \$20 Paraguayan a box for the consumer.....	do	.20	2.5
From \$20 to \$30 Paraguayan a box for the consumer.....	do	.30	3.75
From \$30 to \$40 Paraguayan a box for the consumer.....	do	.40	5
Loose cigars:			
Up to \$1 Paraguayan per 100 for the consumer.....	Hundred..	.01	0.12
From \$1 to \$2 Paraguayan per 100 for the consumer.....	do	.02	0.25
From \$2 to \$4 Paraguayan per 100 for the consumer.....	do	.04	0.5
From \$4 to \$6 Paraguayan per 100 for the consumer.....	do	.06	0.75
From \$6 to \$8 Paraguayan per 100 for the consumer.....	do	.08	1
From \$8 to \$10 Paraguayan per 100 for the consumer.....	do	.10	1.25
Cigars of higher price will pay in proportion.			
Matches, per box of 50 wax tapers.....	Box	.01	0.12
Sirup, or cooling drinks in general.....	Liter	.05	0.62
Liquors:			
Distilled, white.....	do	.10	1.25
Common, by infusion or with essence.....	do	.15	1.87
Wax candles	Package...	.01	0.12

The cigarettes will bear a stamp on each package, the boxes of cigars on each box, the loose cigars on each package rolled in paper, the matches on each box; sirup, cooling drinks, and liquors on each bottle; candles on each package. The stamps must be placed on the boxes in such manner that these can not be opened without tearing them. Each package of cigarettes and package or box of cigars will bear a label, printed, to show the price of the product which it contains, which, summed up with the amount of the stamp, will form a sale price to the consumer.

Wines.—Upon artificial wines there will be collected a duty corresponding to that on wines and a six months' license fee of \$120 Paraguayan in addition.

Beer.—For each liter of beer will be paid 5 cents duty in a form to be determined by the President.

Caña (rum).—For each still holding 80 liters employed for the distillation of caña there will be collected a six months' license fee of \$50 Paraguayan.

AD VALOREM DUTIES.

The following merchandise will pay duty ad valorem:

(1) *Thirty-five per cent ad valorem*.—All merchandise which is not otherwise specifically taxed or is not free of duty.

(2) *Two per cent ad valorem*.—Steel bars in plates or lingets, iron bars in plates or lingets, precious stones, and fine pearls, loose.

(3) *Five per cent ad valorem*.—Jewelry of gold or silver, balls, shot, munition for hunting, plain galvanized iron, iron for roofing, flour, hops, malt, unpolished marble for furniture and buildings, and ordinary powder.

(6) *Twenty-five per cent ad valorem*.—Firearms, ordinary, for hunting, old system, or for cartridges; half linens, ordinary arms for hunting, cotton bed covers, printed cotton goods for dress or shirts, shawls or ponchos of cotton, handkerchiefs, calicoes, fine powder, agave thread, material for making matting, ordinary hats called petate (made of palm), viruta, junco, wool, woolen caps, oilcloths of all kinds, and crude cotton textiles called lienzo.

(7) *Forty per cent ad valorem*.—Animal, vegetable, and mineral oil, with the exception of petroleum; sacks made of cotton or pita (agave thread), crystals in general; printed books which may have tops or lids of tortoise shell, mother-of-pearl, ivory, and their imitations, or which bear incrustations of gold or silver, or of plated metal, or fine gilding; billiard-table covers, porcelain, hats of classes not named in this law; textiles and all articles of silk, excepting those specified in this law; veils in general for ladies, common wines in casks, and felt hats.

(8) *Fifty per cent ad valorem*.—Lucern; firearms and loose barrels for the same, excepting the classes mentioned in this law; pepper, crude or ground; garlic, canary seed, rice; kitchen utensils in general, complete or not; unshelled rice, ready-made textiles, valises, trunks, portmanteaus, and traveling satchels; vetch and other dried vegetables; walking sticks with swords; coffee, ground and in grain; shoes in general, made up or in pieces; onions; beer, in whatever receptacle; cigars and cigarettes of all classes; skyrockets, fireworks and bombs; skins, tanned hides; alcoholic drinks in any form; carriages, complete or in parts; confectionery, sweets not medicinal, brooms, meal, biscuits, grained maise—(i. e., on the cob or shelled), peanuts, butter, lard, billiard-table covers and their accessories; saddles, coarse aprons, belts, overgirdles, and all articles pertaining to horses, made up or ready to be made up; furniture, complete or in pieces; potatoes; laces and silk cords, mixed with or without metallic thread; perfumery in general, cheese, snuff, ready-made cloths; tobacco in leaves or broken up, black or natural; bottled wine, port, Jerez, Madeira, Muscat, Nebiolo, Manzanilla; matches of all kinds, and blank books for commerce.

(9) *Eighty per cent ad valorem*.—Brandy* up to 70° in whatever manner sent, caña in whatever manner put up, and playing cards.

FREE GOODS.

The following merchandise will be free of duty: Telegraph wire, large horses, breeding cattle in general, plows, hoes, bars for mines, bicarbonate of soda (impure), tar, fire extinguishers, steam engines and their utensils, common empty bottles holding at least a liter, switches; gas rods of iron and water pipes which may be less

* Brandy is also entered among the products subject to specific duties.

than 75 millimeters (3 inches) in diameter, also used for making iron beds which may be 35 millimeters (1.4 inches) or more in diameter; coal, carbon of calcium, barley without husks, potash and calcined soda, crossties for railroads, empty demijohns, remedies for cattle, fruits and fresh vegetables, globes, wire fences, mowing scythes and farming or agricultural implements, immigrants' furniture of little value; scientific instruments, with the exception of those whose heads are adorned with precious metals; printed books, with the exceptions indicated; locomotives, machetes, geographical maps; machinery and pieces belonging to industrial establishments and to agriculture and for steamboats; materials and utensils used exclusively for printing and lithography, turntables, printed music, naphtha (impure) for combustion, windmills, religious objects, fresh fish; plants, or branches of the same, to be cultivated; powder especially for mines, resin for soap manufacturers; small wheels, with or without axles, for trains or railroads; coaches and tram freight cars for industrial and agricultural establishments, steel and iron rails, seeds not to be used for consumption; silicates of soda, liquid or dry, for use in the arts; sulphates of copper, crude, for agriculture; rock salt for cattle establishments, Roman cement, tourniquets; wire of iron or steel, galvanized or not galvanized, to No. 14 inclusive; barbed iron or steel wire for the same purpose.

EXPORTATION.

All the products and manufactures of the country will be free of export duty, except those detailed below—payable in gold:

	Pesos.
Skins (cattle), dry or salted.....each... 0.25	
Defective or with holes.....do..... .30	
Tobacco in leaves, without custom-house inspection.....per 10 kilograms... .05	
Yerba mate:	
Leaf or broken.....do..... .15	
Ground do..... .13	

Foreign merchandise will not pay export duty.

All foreign merchandise which may not have been dispatched in some of the national custom-houses on importation will pay one-half of 1 per cent gold for the right of transshipment from one place of embarkation to another.

Foreign merchandise transshipped does not pay duty, with the exception of yerba mate, in leaves and ground, which will pay 15 and 13 cents gold, respectively, per kilogram.

All persons or companies occupied in commerce of exportation and importation will pay a statistical duty of one-half of 1 per cent gold per 1,000 on the values which their operations represent.

Merchandise of national fabrication which may be exported and returned to the country will pay import duty, save that which may be clearly distinguished from similar foreign merchandise and is returned within the term of six months from the date of their leaving.

Merchandise stored in custom-house is subject to a monthly fee of one-half of 1 per cent (gold) of the value.

This fee is to be paid each month, after the first four days.

All classes of explosives, glass merchandise, or merchandise subject to decomposition, and goods free of duty must be dispatched on the day of disembarkation, or, if through inadvertence they are introduced, must pay double storage duty, and the custom-house assumes no responsibility for them.

* * * * *

The values of foreign merchandise will be estimated by the statements of the dispatch agents, evidenced by the original invoice of the selling house when the custom-house requests this, plus freight, insurance, and other ordinary expenses.

Articles intended for consumption in the yerba fields, introduced through the custom-house at Villa Encarnacion, will be allowed a reduction of 25 per cent of the duties, and those introduced by the custom-house of San José, 10 per cent; also sewing needles for making hemp sandals in general, tar, sacks of crude agave, unrefined sugar in bags, bluing, iron buckets, gimlets, baize, cloth "estrella" of wool or mixed, tin tubes (for sucking mate tea), buttons of horn, glue, paste, bone, coco, carose for vests, pantaloons, sack coats, suits, fire pans, half linen, madapolams, cotton domestics, hooks of metal for dresses, axles for carts, small tin caldrons; cotton shirts, white or of colors, ordinary; cotton shirts called *genovese*, for men; cotton undershirts and shirts, plain; chairas, iron keys, axles for carts, single or double shotguns, chisels, iron spurs, iron stirrups, flannels, tartans or cotton flannel, woolen and cotton covers for beds, iron bits, printed cotton goods for dress or shirts called *brin*, oxford, drill, cambric, hatchets, tailor thread, common yellow soap, tin jars, coarse cloth of cotton, cotton shawls or ponchos, hunting ammunition, iron pots of three feet without tops, shovels, cotton handkerchiefs, iron tailor goose, percales or calicoes, chintz cotton for dresses, pikes of steel and iron in general, whetting stones, common powder for hunting, silver plates or zinc stamps, iron brushes or currycombs for horses, scales for weighing up to 34 kilograms, common salt, handsaws in general, trowels; hats called woolen or mixed, ordinary, for men; common wine in caskets.

PONCHOS IN PARAGUAY.

United States manufacturers have never paid any attention to this article, one of the most generally used in South America, especially in Paraguay. I presume many do not know what a poncho is. I read recently a book by a prominent American author, who, in describing a certain South American general, said: "He wore a blanket over his shoulders, a hole being cut in the middle to put his head through." This is a very striking description of a poncho. The article is about the length of an ordinary blanket, but not quite as wide, usually with stripes about 2 inches wide running lengthwise, white and brownish colors being arranged alternately; others are of a solid color, dark russet being popular. The striped ones are those in general use. At each end of the poncho is knotted work, from 4 to 8 centimeters (1.5 to 3.15 inches) wide and fringe from 12 to 16 centimeters (4.7 to 6.3 inches) in width. The trade demands this decoration. In the center is a slit about a foot long, through which the head is passed.

The woolen ponchos measure 2.2 by 1.45 meters (7.2 by 4.84 feet); the knotted work is 8 centimeters and the fringe 12 centimeters wide.

They cost \$5.90 in Argentine gold and come 5 dozen to a case. There is a lower quality 2 by 1.4 meters; price, \$4.40.

Cotton ponchos are about 2 by 1.4 meters (6.56 by 4.6 feet), the knotted work being 4 centimeters and the fringe 16 centimeters wide. These cost \$1.50 apiece, a case containing 12 to 15 dozen.

Another class of cotton poncho is 1.7 by 1.32 meters (5.58 to 4.33 feet), costs 62 cents in Argentine gold, and comes 12 to 15 dozen to a case.

Prices are f. o. b. river steamer at Buenos Ayres.

The principal country from which ponchos come is Germany, which studies the requirements of this market. I think the Asuncion trade is a fair sample of South American markets, so far as the poncho is concerned.

The poncho is used universally in the country. No man regards himself equipped for traveling unless he has his poncho, which he folds lengthwise and throws across his shoulders.

The cotton ponchos imported in 1898 weighed 11,900 kilograms (26,235 pounds) and represented a value of \$15,470 gold. Woolen ponchos were imported to the amount of 9,830 kilograms (21,671 pounds), representing a value of \$28,113.80 gold.

JOHN N. RUFFIN,

ASUNCION, *December 1, 1899.*

Consul.

BRITISH HONDURAS RAILWAY.

Since the publication of my report on the proposed railroad in British Honduras,* the proposal there quoted as accepted by the council of this colony has been withdrawn by the other party to the contract.

Though there is strong opposition to any railway in the colony, it is certain the present government intends to build one, and I am officially informed that any bona fide proposition will be entertained. I have excellent authority for stating that when the railway is actually begun, a concession will be granted by Guatemala on most moderate terms for its extension into the province of Peten, and from there the system can connect with the Mexican railways that are proposed for the State of Yucatan.

The Shelford survey and report of 1896† on the Belize Railway is most exhaustive, and the conditions of the colony are practically unchanged. This report can be furnished to anyone interested, and estimates based on the present market prices in the United States will be about all the calculation required.

I have had several letters since the publication of my previous report from parties who expressed regret that the English proposal had been accepted. They can now improve their opportunity.

* See CONSULAR REPORTS No. 230 (November, 1899); ADVANCE SHEETS No. 529 (September 15, 1899).

† See CONSULAR REPORTS No. 202 (July, 1897).

Guatemala needs an outlet for the vast wooded country adjacent to this colony, and to the north the Government of Mexico is assuming control over that portion of Yucatan which has been and is now in possession of the Santa Cruz Indians. Men and munitions of war are being forwarded to the frontier of Yucatan and British Honduras, and, either peaceably or by force, Mexico intends to establish civil authority in all that State. Then the natural outlet to the sea would be by way of the port of Belize. The main difficulty in the whole railway situation will be the delay attendant upon the ratification of the action of the local government by the Colonial Office in London.

I shall be glad to forward the report of the Shelford survey, which was undertaken by this government and published at its expense, to any of the railway builders of the United States.

W. L. AVERY,

BELIZE, *January 24, 1900.*

Consul.

RAILWAY IN SHANTUNG.

Ambassador White sends from Berlin, January 4, 1900, copy of an official publication dealing with the development of the Kyao-chau district, from which the following extract is taken:

On the 1st of June, 1899, the concession for the construction and management of a railway from Tsingtau via Wei hsien to Isi nan fu, the provincial metropolis of Shantung, with a branch line to Po shan was granted by the chancellor of the Empire to a syndicate representing a wide circle of German industries and mercantile interests.

This company was organized about the 14th of June, 1899, as the Shantung Railway Company, with headquarters in Berlin. The removal of the headquarters to Tsingtau, conformably to the terms of concession, is already in progress. The company has a ground capital of \$12,852,000, of which \$3,213,000 has already been deposited. The company has pledged itself to build and put in operation the road within five years and the extension line from Tsingtau to Wei hsien within a period of three years. The united length of these roads will be about 280 miles—the branch line Tsingtau-Wei hsien, 112 miles.

By the establishment of these roads, the great coal districts in the north of the province of Shantung will be united in a practical way with the important districts between Tsingtau and Isi nan fu. The road is to be the normal gauge—1.5 yards. The foundation work is already provided for a double track.

Supplementary to the expenditures of the Government for the harbor works in Kyao-chau Bay and for the general expenses of administration, the company has agreed to the payment of a tax from the profits of the enterprise in proportion as the annual dividends shall exceed the sum total by 5 per cent. The German Government reserves the right to acquire possession of the railway at a suitable price at the expiration of sixty years. The terms for the construction and management are such as to secure to the German Government the operative right of control; but, at the same time, free action for the execution of the enterprise is guaranteed to the company.

Preliminary work has been begun in Germany, as well as in China. The delivery of the superstructure materials for the entire railway, the contracts for the delivery and setting up of bridges, as well as for the requisite transportation of locomotives, passenger, freight, and coal cars, have been given to German enterprises by the Berlin division of the company. The stock already contracted for approximates in weight to 85,000 tons and in value to about \$4,760,000. Contracts for the shipment of this material to Tsingtau have been made with German steamship companies. The first delivery of tires, sleepers, rails, and small iron tools to the weight of 4,200 tons was shipped during December, 1899, for an extension of 15½ miles. The Chinese Government has conceded the free import of all railway materials and rolling stock.

A board of directors, with competent staff, for the construction and management of the road has been established at Tsingtau. Preliminary studies were made as early as September, 1899. This vigorous beginning of the work leads to the expectation that the entire extension will be completed within the fixed time, and railroad connection between the important coal districts of Wei hsien and Po shan and the German ports will be accomplished.

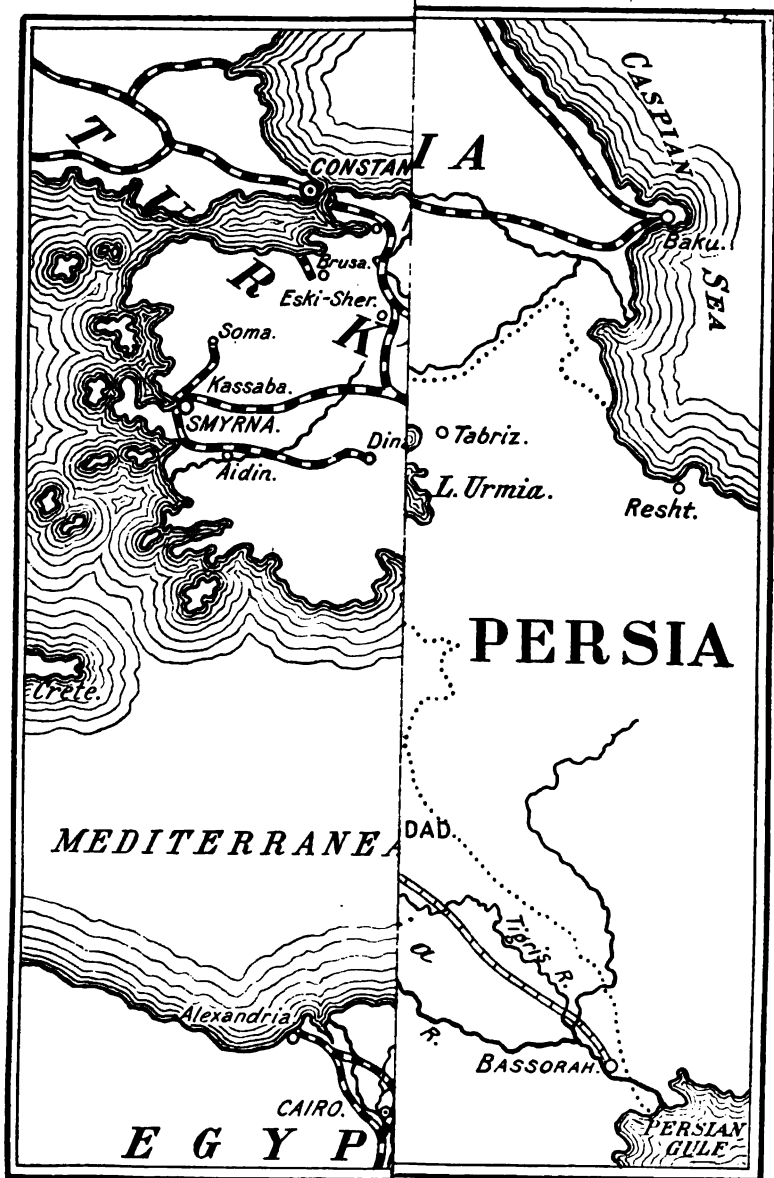
RAILROAD CONSTRUCTION IN ASIA MINOR.

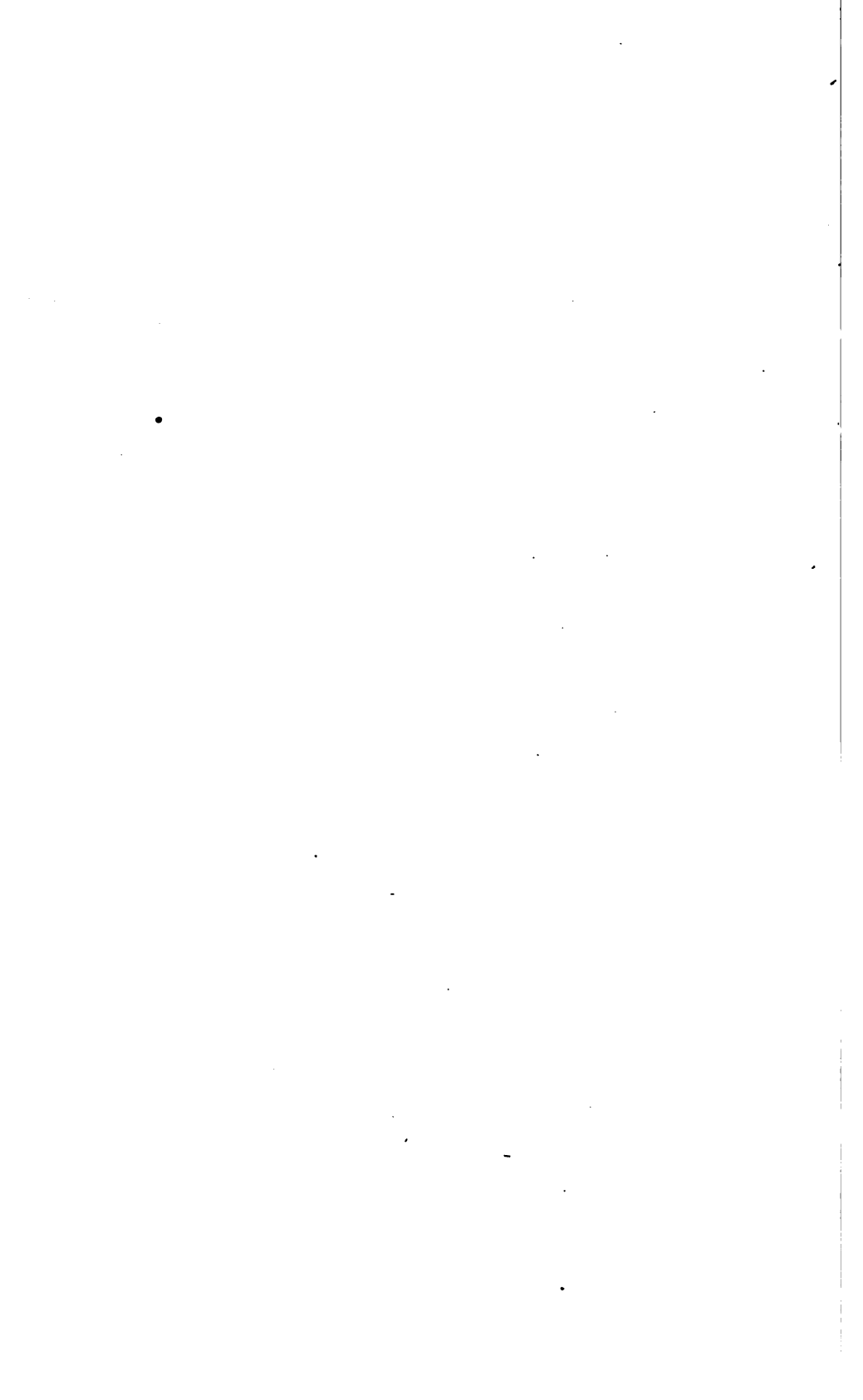
The newspapers report that the controversy in regard to railroad construction in Asia Minor has been settled for the present by a concession granted to the Anatolia Railway Company. This German company, it is understood, will extend its present line, which terminates at Konieh, via Marash and Bagdad to Bassorah. The opposition of the French company owning the Smyrna-Kassaba road, which extends east as far as Afion Karahissar, was removed by granting this company 40 per cent of the shares in the extension, and the local objection was obviated by a provision in the concession giving the Turkish Government the right to purchase the line at any time.

Few railroad lines can be of greater prospective importance than this 2,000 miles of railroad uniting the Persian Gulf with Europe, forming a rapid transit to and from the East, opening up large tracts of agricultural country, and paving the way for German commercial supremacy in Asia Minor and Mesopotamia.

It is not difficult to see how Germany, with preferential rates for goods on German lines, will be able to control the chief markets of Asia Minor and invade the East. A reference to the accompanying map will show how Germany is acquiring commercial supremacy in Asia Minor. Germans purchased the Constantinople-Ismid Railroad from an English company and extended it to Angora. They also checkmated the French and English by extending their line from Eski-Sher to Konieh, thus preventing extension of both the Smyrna-Afion Karahissar and the Smyrna-Aidin-Dinair roads.

The two great distributing points—Constantinople and Smyrna—are thus controlled by Germans, and German goods may enter the in-





terior of Asia Minor and the great valley of the Tigris and Euphrates on German-controlled roads at a decided advantage. Germans have obtained the right to build docks and warehouses at Haida Pasha, the terminus of the Anatolian railroads; and with through rates for German goods on German lines, German freight cars may be sent across the Bosphorus and travel to Mesopotamia and the confines of India and Persia without change. Goods from the United States and other countries will have to be transshipped at Constantinople or Smyrna, and will be consequently at a disadvantage.

But water transport is always, mile for mile, cheaper than rail transport, and I see but one scheme of competition left for the United States in Mesopotamia and southern Anatolia. Let the proposed line from Samsoun (or Sinope) to Sivas, Diarbekir, and Bagdad be built, and a country vastly superior in agricultural products will be opened up, giving more local traffic than the German line from Konieh to Bagdad, which must traverse a barren and sparsely inhabited land.

MILO A. JEWETT,

SIVAS, *December 27, 1899.*

Consul.

RAILROADS IN ASIA.

From different reliable German newspapers, I have gathered the following information with reference to railroads in Asia.

The lines now in existence have a total length of about 30,000 miles, of which two-thirds belong to British India. The portions of the Trans-Caspian and Trans-Siberian railways already constructed have a length of 3,200 miles. A number of European syndicates have obtained concessions for 3,600 miles of railroads in China, which will traverse regions rich in minerals and agriculture; many of these lines are already in process of construction. The Chinese Government owns about 300 miles of railway. The lines are very remunerative, especially that from Peking to Tientsin. Japan is well provided with railroads, the present length being 3,200 miles. French Indo China has at present only 120 miles, but the French possessions in Cochin-China, Anam, and Tonkin will soon have 2,400 miles, which will greatly help to develop their mineral and agricultural resources. The Dutch Indies are well supplied. Java alone has 1,000 miles. There are as yet no railroads in Persia of any consequence; but Turkey operates 1,500 miles in Asia, and 600 miles more are in construction or projected.

The Russian commission which for months past has been busy with the preliminaries for the construction of a railroad from Astrakhan up the River Volga has completed its labors. The plan is

to lay the track on the left shore of the Volga and to connect with the general Russian railway system. This railroad will become of the utmost importance for the whole commerce of Russia with central Asia and Persia—the more so because, at the same time, the Volga channel through the Caspian Sea will be deepened to enable steamers to proceed directly to Astrakhan without being compelled to reload on flat-bottomed lighters.

RICHARD GUENTHER,

FRANKFORT, *January 25, 1900.*

Consul-General.

BUILDING IN SIAM.

There is a great amount of building going on in Bangkok at the present time, a conservative estimate placing the number of permanent buildings that have been erected during the last year and are now in process of construction at 2,500. These do not include the temporary structures of the natives, but represent all styles of more permanent buildings, from the rented shop and humble dwelling to the new palace at Tusit Park and the most pretentious modern dwelling house. The materials used in the construction of these buildings are wood, brick, corrugated iron, and tile. A few years ago, teak wood was the most common building material, but the great advance in the price of teak has led to the importation of cheaper woods and an endeavor to obtain other lumber from the forests of Siam. As yet, there has been no good wood found to take the place of teak; for, in addition to durability and strength, this possesses the valuable quality of resisting the white ants better than other woods. Brick columns are now being used in the place of teak posts. While these are cheaper and furnish the strength needed, they are very clumsy in an otherwise lightly constructed building, and hence objectionable. It is believed that light iron girders and posts would find very general favor if once they were introduced. Several large fires have given rise to ordinances prohibiting "attap" (thatched) roofs or bamboo structures in the city in future. These circumstances, on the whole, have proved beneficial, for the city now rising is for a large part made up of brick, iron, and tile.

The sanitary department has also taken advantage of these fires to broaden the streets in the burned districts, so as to give room for sidewalks of brick and cement and open brick sewers between the sidewalks and the streets. These improvements are now being pushed beyond the confines of the burned districts; and the temporary structures that have encroached upon the streets, as time has gone by, are gradually giving way to sidewalks and sewers throughout the city.

In a city of from 500,000 to 1,000,000 inhabitants, rapidly increasing in size, and so scattered that it may well be called a city of magnificent distances, this great amount of building, these extensive improvements in walks and sewers, and the construction of new bridges in connection with the opening up of new streets create a large demand upon the market. This demand promises to increase, rather than diminish, for some time to come; for, with all these new buildings in the city, rents are exceedingly high and it is quite impossible for one to secure a comfortable tenement. Unimproved real estate is rapidly advancing in price, on account of the demand for new house lots; and the development of Tusit Park, adjoining the city, by the King is causing an extension of the streets, many of which are being paved with brick, that will take years for completion.

The city has been obliged to manufacture its own brick for a year or more. All the brickyards of the country turn out a coarse, rough product, so unsightly that it must always be covered up with plaster. Indeed, out of the great number of brick structures in Bangkok, I do not remember to have seen one that in America would be known by its exterior as a brick building.

Good clay is abundant, labor is cheap, and transportation by water is possible from every part of the country and to every part of the city through the numberless canals of this vast plain. The expense of fuel is the only thing that stands in the way of the cheap production of brick in the country. Good, smooth, common brick, pressed brick, cornice and decorative work, and good tile would appeal to the tastes of these people and would command a good price.

A very fair quality of lime is made from the limestone that is found in abundance along the shores of the Gulf of Siam, but the cement is all imported. The best cement comes from Denmark and England. American cement is unknown. One of the city engineers, qualified to speak, says that there ought to be a good market here for the second quality of Portland cement. The first quality sets too quickly, both for the work and for the workmen. Every enterprise must take into consideration the movements of the people, which are always deliberate. Unless care is taken in storing to keep it well covered and free from the ground, good cement is apt to harden if left in the package any length of time, on account of the great dampness of the climate. Corrugated iron is extensively used in the less pretentious buildings for roofing, and to some extent for siding. During the year 1897, there was imported of this material \$73,756 Mexican (\$35,992 in United States currency); and during the year 1898, \$126,800 Mexican (\$58,054). When one considers that there is far more building going on to-day than at any time during these two years,

this will give some idea of the increasing demand for some durable, cheap building material. And yet this corrugated iron but very poorly supplies the want. As a covering for a building in this tropical climate, it is exceedingly hot; heavy for the light frames here used; hard to penetrate with nails; and, owing to the extended rainy season—from May to November—it lasts in good form for only about five years.

The most of this corrugated iron comes from Belgium; some of it from Germany. Although several attempts have been made to introduce American iron, it has not yet been able to compete with the European product, on account of the heavier freights of the longer haul. At present, this iron is bringing \$10 Mexican (\$4.64) a picul (133 pounds) and is rapidly advancing on account of a shortage in the Bangkok, Singapore, and Hongkong markets.

Any material that would furnish a light, cheap, noncombustible sheeting and roofing for buildings, such as might be termed temporary structures in America, would easily control the market here and displace the corrugated iron. If it can be easily penetrated by nails, it will be a great merit; and the larger the sheets or squares the better it would serve the purpose. Such a material must be able to withstand the very sudden changes that occur in this climate, of drenching rains for hours, immediately followed by the intense heat of the tropical sun, without being water-soaked by the one or warped and curled by the other. It would seem that some of the various products containing asbestos that have recently been invented in the United States ought to meet this need. To introduce such an article, it would be necessary to demonstrate its merits by using it in the construction of one or two buildings, as actual acquaintance with the thing itself is necessary in order to introduce a new article into this market.

Building hardware is in large demand, and the American goods are held in much favor; but, on account of the upward tendency of our iron market and expense of freight, we are shut out by the European prices. Wood-working tools from the United States are much preferred to the cheap, clumsy articles that come from Germany; and, notwithstanding the higher prices, they are gradually winning their way. On the whole, however, Americans must be content to wait the appreciation of a good article that comes with a higher civilization before we will find much of a demand for our tools of the pattern and quality that are used at home. Something of an immediate trade in cabinetmakers' tools for working hard woods could no doubt be developed, if the trouble were taken to copy the tools that are already used by the cabinetmakers here.

HAMILTON KING,
Consul-General.

BANGKOK, *December 21, 1899.*

AGRICULTURAL IMPLEMENTS IN INDIA.

In reply to inquiries by an Illinois firm,* Consul Fee, of Bombay, under date of December 13, 1899, says:

The population of India is about four times that of the United States, while the latter has about double the area of the former. As the bulk of the people are employed in agricultural pursuits, it is obvious that those parts of India capable of cultivation must be divided into small farms. Each man rents, generally, but a few acres. There are, of course, occasional large plantations run by a rich man or rajah, but these are exceptional. The ancient plow, costing perhaps 50 or 75 cents, pulled by oxen, is used. Few implements are employed. The mamooties—a kind of a mattock, more like a carpenter's adz, with a wider blade—are universally used for all manner of work in the ground. Natives will not use the wheelbarrow or the shovel. Women carry dirt, mortar, brick, and in fact everything in baskets on their heads.

On account of the famine of 1896-97 and again this year in western India, the country people are not able to buy. Besides, there seems to be a disinclination to adopt new methods making easier the daily burden. A short time since, a large agricultural-implement firm of England sent a steam plow and men to exhibit it in India. They took it all over the country and at a great expense gave practical exhibitions and instructions. I am reliably informed that they did not secure a single order. I cite this as an example of the native indifference to improvements.

Just now, there is considerable talk in local papers on the question of drilling deep wells for water in the famine districts of India. Here is a chance for an American firm to do some business.

BANKING AND CURRENCY IN CHINA.

In reply to inquiries by a member of Congress,† Consul-General Goodnow writes from Shanghai, December 11, 1899:

The Hongkong and Shanghai Banking Company was incorporated July 20, 1867, under an ordinance of the colony of Hongkong. The first incorporation was for twenty-one years. On May 4, 1887, the incorporation was continued for a second term of twenty-one years.

* To which the letter has been forwarded.

† To whom a copy of the letter has been sent.

The paid-up capital on June 30, 1899, was \$10,000,000 Mexican.* The reserve fund, at the same time, was \$10,000,000 Mexican. The current accounts were \$85,217,444.94 Mexican, and fixed deposits \$66,841,749.16 Mexican.

The issue of notes was as follows: Authorized issue against securities deposited with the Crown agent for the colonies, \$10,000,000; additional issue, authorized by a Hongkong ordinance of 1899, against coin lodged with the Hongkong government, \$3,622,695; total note circulation, \$13,622,695 Mexican. The amount of coin lodged with the Hongkong government against note circulation in excess of \$10,000,000 is equal to \$5,000,000.

The rules provide that—

The total amount of the bills and notes of the company payable to bearer on demand and actually in circulation shall not at any time exceed the amount of the capital of the company actually paid up, and there shall be kept by each establishment of the company an amount of coin and bullion equal to one-third at least of such of the said bills and notes as were issued from such establishment and are for the time being in circulation.

The shareholders of the company shall be subject to unlimited liability in respect of all or any such issue or issues of bills and notes; and, in case the general assets of the company are, in the event of the company being wound up, insufficient to satisfy the claims of both the note holders and the general creditors, then the shareholders of the company, after satisfying the remaining demands of the note holders, shall be liable to contribute a sum equal to the amount received by the note holders out of the general assets of the company.

The ordinance of 1899 allowed the issue of certain notes in excess of the legal amount, as stated above, but only on the deposit of coin with the Hongkong government to cover the amount of such notes and any probable or possible depreciation in the price of silver. This extra issue of bills was made necessary by the increasing business along the coast requiring currency and the exigency of supplying some circulating medium less bulky than the coined silver.

While there is no statement on the subject, I can not see that these bank notes have any legal-tender quality.

Under extraterritoriality, each defendant, in case of a lawsuit, is entitled to the law of his own nationality. Notes given a legal-tender quality by one nationality would not have that quality with any other nationality, except by positive enactment.

The branches of this bank are so widespread (thus making it easy to transfer its notes into silver), its notes are so generally accepted, and the bank's reputation is so thoroughly good that in practice these notes are received by everybody in payment for debt. Branches and agencies of the bank are at the following places:

* The valuation of the Mexican dollar, January 1, 1900, by the United States Director of the Mint was 46.4 cents.

Hongkong, Shanghai, New York, London, Calcutta, Bombay, Fuchau, Hiogo, Saigon, Hankau, Amoy, Manila, San Francisco, Singapore, Lyons, Tientsin, Peking, Iloilo, Penang, Batavia, Bangkok, Hamburg, Nagasaki, Rangoon, Colombo, and Soerabaya.

At the present time, the bank pays 2 per cent per annum to depositors on daily balance, 3 per cent per annum on fixed deposits for three months, 4 per cent per annum on fixed deposits for six months, and 5 per cent per annum on fixed deposits for twelve months.

Each branch issues its notes payable to bearer on demand at the place of issue and in coin lawfully current at such place. Notes issued in Hongkong are payable in the currency of Hongkong, consisting of British dollars (which do not circulate throughout China) and "chopped" Mexicans. The limited area of circulation of the first and the damaged condition of the second reduce their value as compared with the clean Mexican dollar, in which the notes of the Shanghai branch are payable. The Hongkong dollar to-day is worth 71.28 tael cents, while the clean Mexican dollar is worth 75.588 tael cents.

The theoretical money of this country is the tael, which is a Chinese ounce of silver. The value of this tael (in other words, the weight of the ounce) differs in almost every port, and the value of any of these taels varies with the value of silver bullion.

The real standard money of the people in China is copper cash, which are worth about one-twentieth of a gold cent each.

The actual money of circulation for the trade of foreigners in central and northern China is the clean Mexican dollar; in southern China, it is the "chopped" Mexican dollar, worth from 3 to 6 per cent less than the "clean" dollar; in Hongkong, it is the British dollar and the "chopped" dollar.

Coined dollars are bought and sold precisely as any other article of merchandise. Their price varies, not only according to the true value—that is, the amount of bulk silver in them—but according to the demand for them in any particular place for the purposes of trade. This latter element of value is made prominent from the bulky character of the silver coinage, making it more expensive and more dangerous to transport, and also from the slowness of transportation between ports on this coast. Shanghai at the present time has a surplus of silver dollars, and in some other ports they are scarce. There is no method of transportation, except by water, the boats averaging not more than 10 knots an hour, except those of two or three lines running direct between Shanghai and Hongkong.

The silver in circulation, each time it is paid out, is "shroffed" (examined) by the recipient or his Chinese cashier. The latter is

very expert in the handling of money, and by the ring of the coin can detect not only the bad ones, but those of light weight. The banks, in paying out silver, do not guarantee the quality of it. This office at one time received \$421 in silver from one of the banks and sent back the money in the identical package in which it was received, on the same day and to the same bank, for deposit. Twenty-three were thrown out by the bank as either bad or light. To our statement that we received the money from that bank, the answer was that "we should have shroffed it when we received it," which was final, but hardly satisfactory.

When it comes to the exchange of American gold coin or paper money into silver, another element enters into the question. Our coin does not circulate here. Our silver dollar sells by weight as bulk silver. Our gold coin can be sold to the jeweler for its metal value—that is, for its exact weight as gold. The banks will not pay as much as the jewelers, because the former figure out the cost of transportation and risk of loss in sending gold coin to America. Our greenbacks are worth a little more than our gold coin when sold to the banks, because the cost of transportation to America is less.

In all this uncertainty in the value of the medium of exchange, by which all other business men and the wage earners suffer, the banks are the most prosperous business institutions in the East.

The Hongkong and Shanghai Bank, I have stated, has a reserve fund of ten millions. The net profit of that bank for the half year ended June 30, 1899, amounted to \$3,447,579.68, after making provision for bad and doubtful debts and deducting all expenses and interest paid and due. At the last-mentioned date \$1,000,000 was transferred from the profit-and-loss account to the credit of the reserve fund, which to-day stands at \$11,000,000. A dividend of £1 10s. (\$7.30) per share (par value, \$125 Mexican) was paid June 30, 1899, for the half year, and \$963,532.06 was carried forward to the new profit-and-loss account. The shares of this bank are quoted at 345 per cent premium to-day.

JOHN GOODNOW,
Consul-General.

SHANGHAI, *December 13, 1899.*

AMERICAN HONG NAMES IN CHINA.

Minister Conger sends from Peking, December 16, 1899, copies of correspondence with the Chinese Government in regard to the improper use of American hong names by Chinese, and also copy of an instruction issued by the minister to the consular officers of the United States in China on the subject, as follows:

THE TSUNGLI YAMÊN TO MR. CONGER.

PEKING, December 16, 1899.

YOUR EXCELLENCY: The Prince and Ministers have the honor to inform the minister of the United States that on the 7th of December they received a communication from the minister superintendent of trade for the southern ports, as follows:

"The minister superintendent of trade has learned on inquiry that inside and outside of the treaty ports there is a class of Chinese traders who, in league with foreigners, hang out the signboard of a foreign hong and open places of business, thus pretending to be a foreign hong. These persons are all untrustworthy and dishonest Chinese traders, whose purpose is to aim to evade the payment of likin duties. This not only proves injurious to the administration of public business, but it is equally harmful to the reputation of foreign countries. It is urgently necessary that this practice should be stringently examined into and prohibited; and to this end the minister superintendent requests that the Yamên address the foreign ministers on the subject, asking them in turn to instruct their respective consuls to notify all foreign merchants that in future, should Chinese traders falsely use the signboard of a foreign hong, in violation of the prohibitory injunction of China, they will be dealt with according to the Chinese law, and foreign merchants can not interpose or meddle in the matter."

The Yamên would observe that it appears that inside and outside of the treaty ports there constantly occur cases of untrustworthy and dishonest Chinese traders who fraudulently use the signboards of foreign hongs, their aim and purpose being to defraud the likin revenue by smuggling. This is an act that not only works injury to the revenue of China, but is also harmful to the reputation of foreign countries.

As in duty bound, the Prince and Ministers have the honor, therefore, to request the minister of the United States in turn to instruct the United States consuls in China to notify American merchants that when cases happen of dishonest Chinese traders fraudulently using the signboard of a foreign hong they will be dealt with according to Chinese law, and the foreign merchant can not meddle or interfere in the matter.

MR. CONGER TO THE TSUNGLI YAMÊN.

LEGATION OF THE UNITED STATES OF AMERICA,

Peking, December 19, 1899.

YOUR HIGHNESS AND YOUR EXCELLENCIES: I have the honor to acknowledge the receipt of the note from Your Highness and Your Excellencies of the 16th instant, stating, in substance, that the minister superintendent of trade has learned that in certain localities there is a class of Chinese traders who, in league with foreigners, hang out signs of foreign hongs, and pretend to be foreign hongs, for the purpose of smuggling, and thus evading likin duties; which practice is not only

very injurious to the administration of public business, but is equally harmful to the reputation of foreign countries.

Your Highness and Your Excellencies request that the consuls of the United States in China be instructed to notify American merchants that when cases happen of dishonest Chinese traders fraudulently using the sign of a foreign hong, they will be dealt with according to Chinese law, and the foreign merchants can not meddle or interfere in the matter.

I hasten to reply, assuring Your Highness and Your Excellencies that neither my Government nor myself have any sympathy in wrongdoing, nor will citizens of the United States be at any time sustained in practices which are known to be illegal or fraudulent.

I shall therefore take pleasure in instructing our consuls to notify the American merchants in their respective jurisdictions that they must not give permission to the fraudulent use of their names in any business or practice whatsoever.

MR. CONGER TO ALL CONSULAR OFFICERS IN CHINA.

LEGATION OF THE UNITED STATES OF AMERICA,

Pekin, December 19, 1899.

SIR: The attention of this legation having been called by the Chinese Government to the illegal and fraudulent use of foreign hong names by Chinese, in order that they may avoid the payment of likin duties or for other reasons, you are requested to warn the American merchants living within your consular jurisdiction that such practices can not but be damaging to their good reputation here, and that they will not have the sympathy or support of either the Government or the legation in such evil practices, and that they should not give permission to the fraudulent use of their names in any business or practice whatever.

COMMUNICATION WITH SOUTH AND EAST AFRICA.*

In addition to the steamships of the German East African Line, which touch at Amsterdam twice a month on their way to Delagoa Bay, the steamers of the Union Line and Castle Line, sailing weekly from England, are used for the conveyance of passengers and freight from Dutch ports.

The German boats call at Lisbon, Naples, Zanzibar, Mozambique, Beira, Delagoa Bay, and Durban; but freight is taken only for Beira, Delagoa Bay, and Durban, as well as for Chinde, Quilimane, and Marmagao.

Steamers of the Union and Castle lines sail each Saturday from Southampton.

The British and Colonial Steam Navigation Company, Limited, as well as the Union and Castle lines, issue through tickets from London to Johannesburg via Cape Town, first-class fare being £46 5s. 3d. (\$225.13) to Johannesburg. The Union and Castle

* Consul Hill's report is given as the latest statement of regular transportation facilities, but it should be added that communication, especially by railroad, has been greatly interrupted by the war in South Africa.

steamship companies issue "open-berth" tickets by their intermediate steamers at a fare of £10 10s. (\$51.09). Tickets at low fares are also issued by the Bucknall and Australian lines.

From Cape Town, the Cape government railways have a direct line of rail to Kimberley, Bulawayo, Bloemfontein, Johannesburg, and Pretoria, and advertise their railway in connection with the English steamers as the shortest, quickest, and cheapest route between Europe and the South African diamond and gold fields, the entire journey by sea and rail from England to Johannesburg and Pretoria consuming 19 days and to Bulawayo 21 days.

The rates of passage and through fares are as follows:

London to Cape Town by Royal Mail steamers, 5,951 miles—first class, £40 19s. (\$199.28); second class, £26 5s. (\$127.85); third class, £13 13s. (\$66.43); average time, 17 days.

London or Southampton to Cape Town by intermediate steamers, 5,951 miles—first class, £37 16s. (\$183.95); second class, £24 3s. (\$117.53); third class, £13 13s. (\$66.43); average time, 21 days.

Cape Town to Johannesburg by rail, 1,014 miles—first class, £11 11s. 9d. (\$56.37); second class, £7 19s. 6d. (\$38.81); third class, £4 6s. 3d. (\$20.99); average time, 2 days.

Cape Town to Kimberley by rail, 647 miles—first class, £8 1s. 9d. (\$39.36); second class, £5 7s. 10d. (\$26.24); third class, £2 13s. 11d. (\$13.12); average time, 1½ days.

Cape Town to Bulawayo by rail, 1,360 miles—first class, £18 8s. 11d. (\$89.76); second class, £12 5s. 11d. (\$59.83); third class, £5 13s. 5d. (\$27.60); average time, 4 days.

The British and Colonial steamships sail about every fortnight direct from London to Cape Town. They are of light draft, especially designed to cross the bar at East London and Natal, but carry only first-class passengers.

The Aberdeen Line boats also sail every fortnight from London direct to Port Natal, taking merchandise and passengers at through rates for Delagoa Bay, Beira, Chinde, and East African ports, calling at Portland, Teneriffe.

The Natal government railways publish a prospectus containing the following:

Through fares, London to Johannesburg via Natal by mail steamers and rail—first class, £52 5s. (\$254.27); second class, £34 15s. 6d. (\$169.23); third class, £21 2s. 6d. (\$102.80).

By intermediate steamers and rail—first class, £49 2s. (\$238.95); second class, £32 13s. 6d. (\$159.01); third class, £21 2s. 6d. (\$102.80).

By Bucknall Bros.' steamers and rail—first class, £45 19s. (\$223.62).

By Bullard, King & Co.'s steamers and rail—first class, £40 14s. (\$198.07).

By J. T. Rennie, Son & Co.'s steamers and rail—first class, £40 14s. (\$198.07).

The time by the railway from Durban to Johannesburg is 27 hours; from Durban to Pretoria, 29 hours.

Freights from Durban to Johannesburg—normal class, 100 pounds, 7s. 8d. (\$1.87); intermediate class, 100 pounds, 5s. 9d. (\$1.40); rough goods, not less than 5 tons, per 100 pounds, 4s. 11d. (\$1.20).

Durban to Pretoria—normal class, per 100 pounds, 8s. 2d. (\$1.99); intermediate class, 6s. 3d. (\$1.52), rough goods, not less than 5 tons, per 100 pounds, 5s. 4d. (\$1.28).

CABLE RATES.

The rates from any station in the United Kingdom of the Eastern and South African Telegraph Company, Limited, to the east and west coasts of Africa have been published lately as follows:

United Kingdom to—	Rate.	
West coast of Africa and adjacent islands:		
Angola—	<i>s. d.</i>	
Benguela	9 9	\$2.37
Loanda	8 6	2.07
Loanda government stations.....	8 7	2.09
Mossamedes	10 9	2.62
Mossamedes government stations.....	10 10	2.64
German Southwest Africa (Swakopmund).....	4 2	1.02
South Africa:		
Nyassaland	4 5	1.07
Cape Colony, including Cape Town.....	4 0	.97
Natal, including Durban.....	4 0	.97
Southern Rhodesia.....	4 2	1.02
Northern Rhodesia.....	4 5	1.07
South African Republic and Orange Free State.....	4 0	.97
East coast of Africa and adjacent islands:		
British East Africa protectorate—		
Mombasa	5 0	1.21
Other places.....	5 5	1.31
German East African stations.....	5 2	1.25
Madagascar.....	5 8	1.38
Mauritius, Seychelles, and Zanzibar.....	5 0	1.21
Portuguese East Africa—		
Mazambique, Lourenço Marquez	5 1	1.23
Ressano Garcia, Chibuto, and Inhambane.....		
Beira Railway Company's stations.....	4 2	1.01
Portuguese Zambesia.....	4 6	1.09

FRANK D. HILL,

AMSTERDAM, *January 15, 1900.**Consul.*

Under date of February 3, Consul Hill reports the amalgamation of the Union Steamship Company and the Castle Mail Packet Company, to provide for the carrying out of the joint mail contract which the two companies have made with the Cape government for ten years from next October, for the conveyance once a week of the mails to and from South Africa.

The new company will be called the Union-Castle Mail Steamship Company, Limited, and will have a nominal capital of £2,000,000 (\$9,732,000).

TRADE IN CAPE COLONY.

While American trade in South Africa during the last three months has been excellent, as evidenced by the receipts of food stuffs, mules, horses, etc., yet I regret that the United States is not having a larger share in the exports hither of such manufactured articles as bottled beer and spirits, clothing, hose, cloth, harness, saddles, electrical field outfits, wagons, carts, telegraphic material, traction engines, steam plows, wagon material, boots and shoes, iron, steel, bridge work, military cycles, etc. Large orders for locomotives and rolling stock have been placed. While the war is in its earlier stages, and the rebate trade with the Boer States is nil, diminishing the volume of trade, a very large business is still being done in certain lines; and the goods of all sorts taken by the Boer armies from the British colonies will have to be replaced. A demand for United States goods must come when the war is over.

The mine owners of the Transvaal are not idle, but have their engineers and draftsmen at work preparing plans; and orders are being placed somewhere for mining machinery and plants to replace what may be destroyed or injured, and in anticipation of new operations and increased business. Many new plants are lying at seaports, stopped in transit. The coast cities are preparing their docks, now inadequate and crowded beyond their capacity, for the great influx of goods when the strife is over. Cape Bay is crowded with vessels; as many as eighty to ninety have been counted at one time.

I desire to impress upon American manufacturers the necessity of earnest effort and prompt shipments to gain this trade. It is to be regretted that orders are being refused or accepted and held back by American manufacturers in the fear of nonpayment. Such action may seriously affect future business. If they are unable to fill orders, they should not hesitate to say so; but they should not accept and fail to ship. The seaport cities are benefiting by the war; the demand for cattle, sheep, vegetables, and forage is such that, with the advance in prices, the agriculturists are prospering. In fact, excepting in the besieged cities, the colonies, so far as trade is concerned, are thriving.

I note that a demand for bakers' ovens and appliances may arise, as bakers' licenses in the colony have been abolished. A New York firm has a nice article in the line of ovens for small bakeries on display. The demand for furniture even now is good, the refugees from the Transvaal preparing houses, it would seem, for a protracted stay.

As lumber has advanced 25 per cent and other articles in proportion, furniture is expensive.

Tenders for bridge work, electrical and railway material, and machinery are open for bids. Large shipments of fire-extinguishing apparatus from London are arriving, on war account, for hand engines and to put out fire caused by shells. East London has recently built an electric-light plant and an electric tramway, using Babcock & Wilcox boilers and other American appliances. The imports of electrical materials for October exceeded the corresponding month of 1898 by \$30,000.

J. G. STOWE,
Consul-General.

CAPE TOWN, *December 25, 1899.*

RUBBER INDUSTRY OF SIERRA LEONE.*

The kewattia, or rubber tree of West Africa, is one of the most beautiful trees of the forest, growing usually to the height of from 40 to 60 feet. Its leaves are from 4 to 9 inches in length by from 1 to 3 in width, oblong, and tapering toward the ends, supported by a stem from 8 to 9 inches long.

There are also several species of vines which yield a grade of rubber inferior in some respects to that obtained from the tree; however, when gathered with care, this commands a ready sale.

The supply of Freetown market for the most part comes from the hinterlands of Sierra Leone and from the Foutah country in the French protectorate farther in the interior. That which comes from the Foutah territory is limited, owing to the export tax of 3 cents per pound placed by the French upon all rubber sold by natives outside of their protectorate. Notwithstanding this prohibitory restriction upon the native rubber venders, there are several regular traders who furnish to this market a good quantity of Foutah rubber every season. This rubber is almost invariably adulterated with clay, yet it grades well in the local market and brings a good price.

In former years, Freetown was a better depot for rubber than at present, but since the establishment of the French protectorate, which controls the output of the valleys of the adjacent northern rivers, the trade has been diverted to the French port of Konakry, 72 miles distant from Freetown.

The dry period from November until May is the gathering season. Native chiefs supervise and control the sale of the output of their respective territories. The method of gathering the sap is very simple. The body of the tree is tapped, and the juice flows until

* This report was made in reply to inquiries from a Chicago firm, which has received a copy.

exhausted; later, new incisions are made. The juice is usually caught in cups or calabashes attached to the tree, so as to prevent impurities appearing in the rubber. The neglect of this precaution is responsible for a percentage of the incidental adulterations of otherwise good rubber frequently found in the local market.

The native, in his efforts to increase his stock, frequently bleeds the roots as well as the body of the tree; this is fatal to the tree. The product is known as "root rubber," and, besides containing large quantities of impurities, is very inferior to any grade of tree rubber, and would be refused altogether by local buyers, in order to discourage the destruction of the forest, were it not for the sharp competition for export trade.

The rubber is brought to market overland by caravans of natives, or, most frequently, by canoes. These cargoes are generally consigned to some particular agent, though often they are sold to the one making the best offer. For convenience, rubber is arranged in three classes or grades, known as No. 1, No. 2, and No. 3, the character of the tissue and freedom from impurities being the determining factors, as well as the kind of adulterants. Considerable ability on the part of the agent is necessary to enable him to properly assort and select the rubber and to detect adulterations. There are two classes of these—incidental and intentional. The former is the result of carelessness on the part of the gatherers, who do not use proper receptacles for the juice. Intentional adulterations are due to efforts to increase volume and weight by use of dirt, sand, bark, and sometimes stones. Another species of fraud is the mixture of other nonelastic gummy substances with pure juice; still another is to soak rubber by placing it in pits close to the water for a long time. Rubber so treated is seriously injured in quality, and at the same time increased in bulk and weight.

The colonial authorities, as well as the chamber of commerce, are endeavoring, by proper instructions to those concerned, to discourage these abuses and to emphasize in every way possible the importance of improving the quality of the rubber brought to Freetown market.

There is being inaugurated by the governor and officials a plan to foster the planting of rubber trees and vines in the colony. To this end, they have caused to be issued pamphlets of instructions in regard to seeding, transplanting, etc., through the department of agriculture and horticulture. It is hoped that there will be a decided improvement as to quality and quantity of exports in the near future.

The value of rubber exported from Sierra Leone in 1898 was \$255,512.35, of which the amount shipped to Germany was \$33,618.51. The remainder went to England. The prices in the local

market are controlled by Liverpool and Hamburg markets. The local prices for No. 1, No. 2, and No. 3 range between 60, 56, and 48 cents per pound. For No. 3, as little as 30 cents per pound is sometimes paid. The freight, handling, storage, and costs of insurance in either Liverpool or Hamburg are usually estimated at from 6 to 8 cents a pound. Agent's commission for buying and handling in the local market is 5 per cent gross.

The regular steamship communication from this coast to England and Germany makes shipping to those countries comparatively easy; and, as local buyers are always ready to seize any favorable opportunity to convert their accumulated stores of rubber into ready cash, there is little or no inducement for them to seek other markets. For this reason, American dealers desiring to purchase rubber here would do well to establish agencies to buy for them.

JOHN T. WILLIAMS,

SIERRA LEONE, *December 8, 1899.*

Consul.

NOTES.

French Wine Trade.—The Department has received a letter from Mr. Henry E. Gourd, president of the French Chamber of Commerce in New York, calling attention to certain statements made in a report of Consul Tourgée, of Bordeaux,* in regard to adulteration of French wines. Mr. Tourgée, in the report referred to, said that the consumption of wines in France was decreasing, partly because the people believed that the product of the vine was apt to be deleteriously adulterated; and he described a beverage called "piquette"—the use of which, he said, was superseding that of wine—and stated that it was prepared of dried apples of the lowest grade of windfalls, sliced, including skins, cores, and "inhabitants," without distinction as to quality or variety, except that the slices must be prepared in a certain way and that decayed or overripe fruit should not be used. These statements, Mr. Gourd says, are in direct contradiction with the official returns of the French Government, which show that since 1888, when the consumption of wine was 26,108,000 hectoliters (689,694,036 gallons), it has continually increased until it reached, in 1898, 34,937,000 hectoliters (923,130,729 gallons). Mr. Gourd cites a report of United States Consul Covert, of Lyons,† which says that the surplus production of 1899 over 1898 will be absorbed in the following manner:

(1) In home consumption, which is shown by the taxes levied at the city gates upon wines entering the different cities of France to be steadily increasing. The increase for the first half of 1899 was 538,470 hectoliters (14,234,762 gallons). It is believed to be a moderate estimate that the domestic consumption for 1899 in the cities of France will be 1,100,000 hectoliters (29,058,700 gallons) in excess of that of 1898.

(2) There will be a larger consumption in the country than in years of small harvest.

Congress of Navigation at Paris.—The Department has received a copy of the programme of the eighth international congress of navigation, to be held at Paris from July 28 to August 3, 1900. Members will consist of delegates of the French Government and of

*ADVANCE SHEETS OF CONSULAR REPORTS No. 455 (October 4, 1899), and CONSULAR REPORTS No. 230 (November, 1899).

†ADVANCE SHEETS OF CONSULAR REPORTS No. 614 (December 28, 1899), and CONSULAR REPORTS No. 233 (February, 1900).

foreign governments; delegates accredited by chambers of commerce, cities, navigation and towing societies, railroad and transportation companies; technical, scientific, and industrial societies and syndicates; and individuals who have signified to the organizing committee, before the opening of the session, their intention of becoming members. The committee desires to be informed as soon as possible of the approximate number of members. The programme comprises the following:

FIRST SECTION.—INLAND NAVIGATION, WORKS.

First question.—Effect of regulating works upon the regimen of rivers. (To show especially the effect of these works upon inundations.)

Second question.—Progress made in mechanical applications to the feeding of canals.

SECOND SECTION.—INLAND NAVIGATION, OPERATION.

Third question.—Utilization of natural navigable water ways of restricted depth above their maritime section. (Methods of operation and kinds of boats of light draft of water, such as are specially susceptible of application to the colonies.)

Fourth question.—Progress made in mechanical applications in the operation of navigable water ways. Privileged traction companies.

Fifth question.—Institutions to pension and instruct the personnel of the boat crews.

THIRD SECTION.—MARITIME NAVIGATION, WORKS.

Sixth question.—The latest improvements in lighting and buoing coasts and harbor entrances.

Seventh question.—The most recently constructed works in the principal coast-wise or maritime ports.

FOURTH SECTION.—MARITIME NAVIGATION, OPERATION.

Eighth question.—Facilities to be given to ports to meet the demands of ocean-going ships. (Dimensions to be given to the principal works and the general navigable conditions required.)

Ninth question.—Progress in mechanical applications to the plants and other facilities of the ports.

Working of German Law on Exchange Speculation.—In compliance with a request from a San Francisco editor, an instruction was sent by the Department to Consul-General Mason, December 13, 1899, asking for information in regard to the working of the law to prohibit speculation in grain on 'change in Germany. The reply, dated January 6, 1900 (copy of which has been sent the correspondent), reads:

The statute in question was translated and fully described by Consul Julius Muth, of Magdeburg, in a report dated August 31, 1896, which was published in CONSULAR REPORTS No. 194 (November, 1896), page 447. Its effect has been exactly what was intended, to prevent grain speculation in chambers of commerce and

produce exchanges; but it is stated that such transactions are still carried on to some extent privately, the negotiations taking place in counting rooms, restaurants, and on the street. As there is no public or other definite record of these transactions, it is impossible to give any approximate estimate of their number or amount; but commercial men and journals generally agree that the law, while favoring to some extent the interests of the agrarians or agriculturists, has operated badly for Germany by throwing discredit upon what is elsewhere recognized as a legitimate form of trade, and thereby driving out of the country to Antwerp, London, and Amsterdam dealings which would otherwise take place at Bremen, Hamburg, Berlin, Frankfort, Mannheim, and other German cities.

American Locomotives as Patterns in Germany.—Consul-General Mason, of Berlin, under date of February 13, 1900, sends the following translation from the *Fränkische Curier*, Nuremberg, February 6, 1900:

MUNICH, *February 4.*

The Bavarian State Railway Administration has addressed a letter to the locomotive manufacturers Maffei & Krauss, at Munich—from whom it has received heretofore its entire supply of locomotives and who have been naturally surprised by the order given for locomotives from America—stating that these machines are imported from Philadelphia solely for the purpose of enabling the many details of construction wherein they differ from German locomotives to be studied, and, so far as may seem advantageous, adopted in the future construction of engines for the Bavarian State Railways; for the newly imported machines show, as the general direction further explains, in many respects important variations from the construction which is usual in Germany, especially in respect to the boiler, cylinders, and frame construction, dimensions of the axles, valves and valve gearing, the couplings and buffers, while, on the other hand, other parts are not as carefully worked out as is customary in German locomotives.

The general direction will therefore give the Bavarian locomotive builders full opportunity to familiarize themselves with the construction of the American machines, and invites the makers to have them carefully studied by their engineers.

Reform of the Swedish Consular Service.—Vice-Consul-General Hanauer writes from Frankfort, January 25, 1900:

The special commission for Swedish commerce and navigation is considering in what manner Swedish consuls can best be utilized to increase that country's export trade. Some months ago, the commission sent its secretary, a royal commercial counselor, to study the subject abroad. It is proposed to establish a mercantile information bureau, which is to give Swedish merchants the latest data about openings for Swedish products in foreign markets. This bureau is to collect information from Swedish consuls and from other

available sources and communicate the same without delay to parties interested. It is also proposed to give consular aspirants a thorough training. The secretary recommends that foreign methods of training consuls be carefully studied. He especially points to Belgium, where consuls, before they are appointed, are obliged to travel in foreign countries and also examine industrial districts at home, in order to become familiar with the manufacture of goods intended for export; later, at the expense of the Government, they make tours of investigation in countries where such goods are exported.

Parquet Floors in the Netherlands.—In reply to a correspondent,* Consul Listoe, of Rotterdam, on January 20, 1900, says:

Parquet floors are in use in the Netherlands only to a very limited extent. The principal, if not the only, dealer in this article in Rotterdam informs me that he does not sell on an average one floor a month. Such as are used are always of oak, as maple and beech have been found too soft for this purpose in this climate. The size of the pieces for a floor is 15 by 15 inches and 1 inch in thickness, and the price is from 6 to 9 florins per square meter (\$2 to \$3 per square yard). Occasionally, a parquet floor only three-fourths of an inch in thickness is imported from England and sells for 4 florins per square meter (\$1.30 per square yard). So far as I have been able to ascertain, there is only one manufacturer of parquet floors in this consular district—Van Nalsen Brothers, at The Hague. The present source of supply is Cologne and Crefeld, Germany, whence parquet floors are forwarded to this place in about four days after being ordered.

It will be seen from the foregoing that at present there is no great market for parquet floors in Holland, and a successful export business from the United States can hardly be expected until the Dutch taste in this line has been cultivated to a greater extent than at present.

Greek Currants in America.—Consul McGinley, of Athens, under date of January 8, 1900, sends translation of a Greek newspaper clipping, which reads as follows:

The Grecian consul in Chicago has sent to the Minister of Foreign Affairs a very interesting exposé concerning the importation of currants into the United States from Greece. According to his report, both the Corinthian and California currants are on sale in Chicago. The former is far superior in quality; but the Californians by a special process clean their currants and extract the seed; and in Chicago they are subjected to another process of cleaning. They thus acquire a

* To whom copy of the letter has been forwarded.

greater value than the Corinthian currants, which are for the most part mixed with sand and are unclean and filthy. The currant is used in cakes and sirup, and also as a separate article of food.

If it were possible to accustom the people to its use in the latter way, the demand for and consumption of the Corinthian currant would be considerably increased. Besides the relatively heavy tariff, which retards the importation of the Corinthian currant, an important reason for the small consumption is the lack of proper advertising of its merits.

The consul proposes to the currant merchants of Greece that they send to Chicago 50,000 liters (47,317 quarts) of currants of select quality, packed in 200,000 neat pasteboard boxes for distribution, which boxes should be covered with lavish advertisements. The expense of packing, freight, tariff, and distribution, he says, would not exceed \$2,000.

Irish Trade with Cuba.—Consul Touvelle writes from Belfast, January 24, 1900:

There is a pronounced improvement in the textile trade here, which is attributed to the reopening of the Cuban market. Prior to the Spanish-American war, manufacturers of linens were severely handicapped in the struggle to compete with Spanish producers for two reasons: first, the high import duties on entrance into Cuba, and, second, the cost of remitting in bills of exchange on London, which the purchasers in Cuba had to pay in gold, while remittances to Spain were made in Spanish currency, which cost much less. The result was that Belfast linens were driven out of the Cuban markets. Some of the merchants established factories in Spain in the effort to remedy this state of things, but without success. The result of the war, with the revised and justly executed tariff, alters the whole condition of affairs, and Belfast shippers are now able to compete successfully with Spanish or other foreign manufacturers. The improved condition of credit in Cuba is gratifying. It is remarkable that Cuban merchants have been through the year remitting promptly for their purchases, so that delay and difficulty are disappearing. To use the words of a local linen merchant, "All these things are surely a tribute to the wise, able, and enlightened government of that country by the United States."

Advice to Prospective Settlers in Mexico.—Consul Griffith, of Matamoros, writes, on January 27, 1900:

The colonization law of Mexico allows free entry of the effects of intending settlers only to persons who have acquired the legal character and status of colonists, and who come as such to settle in some colony established by authority of a concession granted by the Federal Government. I make this suggestion, inasmuch as within the last two years several companies, with all their household effects,

implements, horses, stock, etc., have driven from various sections of the Central States to the Rio Grande intending to cross over and locate in Mexico. In all these cases, they have either acted under the instructions of ill-advised persons or have expected the representative of the United States to arrange matters satisfactorily for them upon their arrival at the border, and it goes without saying that upon learning that the Government of Mexico would allow exemptions only under the above conditions, they were embarrassed, and usually dispersed after having undergone unnecessary hardship and a great deal of expense.

Consolidation of Debt of Haiti.—Minister Powell writes from Port au Prince, under date of February 13, 1900, that the Haitian Government has consolidated the debt of the Republic. All outstanding claims have been collected, including the loans made by local bankers, which were guaranteed by a percentage of the revenue collected. Under the terms of the consolidation, the creditors relinquish this guaranty and receive a gold-bearing bond, augmented 10 per cent in value, bearing interest at the rate of 1 per cent in gold per month and payable in fourteen years. This releases to the Government certain duties on coffee, logwood, and cocoa which were formerly mortgaged, and provides the cash to meet the expenses for the budget, etc. It further postpones the payment for the debt for a number of years, and it is hoped, says Mr. Powell, that within this period the increased production and foreign consumption will provide the money to pay the bonds as they fall due. The agreement has yet to receive the indorsement of the National Assembly at its session in April, when it is believed a law will be enacted giving the Government the power to conclude this agreement.

Franco-Belgian Steamship Line to the East.—Under date of January 30, 1900, Consul Atwell, of Roubaix, writes as follows:

The French Chamber of Commerce at Antwerp has under consideration a project to establish a Franco-Belgian steamship line between Antwerp, Dunkirk (headquarters of the company), Indo China, and the extreme Orient. The project is recommended by the French minister and consul-general at Brussels, the French Ministers for Foreign Affairs, the Colonies, and Commerce; also, by the Chamber of Commerce of Dunkirk. The French Minister of Commerce says that the opening of the port of Dunkirk to direct trade with the Far East will greatly facilitate the commercial relations of manufacturers and merchants in the north of France with Asiatic

markets, by relieving them of the necessity of shipping merchandise intended for oriental trade through foreign ports. It is thought that trade with the Orient will receive great impetus by the creation of a service of ships sailing under French colors. The company now forming proposes to start with six ships of 4,000 tons each, having a speed of 11 knots. Three of these ships are to be built in France and three abroad. The Chamber of Commerce of Dunkirk recommends that every facility be afforded the projectors of the scheme in order to insure success, as the line is regarded as imperative in the interest of French commerce and particularly desirable for northern France.

Female Physicians in Russia.—Consul-General Guenther, of Frankfort, on January 19, 1900, says:

The German Medical Weekly Journal recently published an article by Dr. Kallmeyer, of St. Petersburg, with reference to the study of medicine in Russia by women, which contains the following:

Women physicians have established themselves all over Russia, and even their opponents must admit that they have achieved a respected position. Part of them are employed by the Government and since last year are entitled to a pension. They occupy positions as county physicians, school physicians, physicians for the poor and the municipal-ambulance system, etc. A Mrs. Dr. N. Schulz, in the St. Petersburg Institute for Experimental Medicine, is one of the foremost experts in bacteriology, and her lectures are well attended by physicians of both sexes. Miss Dr. Lavrós-kaja, of the city hospital, Obuchow, and a few other female physicians were last year with the expedition which went to Turkestan under the personal guidance of the Prince of Oldenburg, to combat the pest. They all returned in good health, but their conduct shows a spirit of heroism worthy to be remembered. Dr. Pavlóskaya has immortalized herself in another direction. At the right time and in the right manner she succeeded in interesting St. Petersburg society in the establishment of a sanitarium for consumptives, and through donations from private sources and the imperial treasury the establishment in Taitzi near St. Petersburg is in operation.

Dr. Schabánova has gained distinction for the erection of a sanitarium for children on the Baltic Sea coast.

United States Commercial Publications in Beirut.—Consul Ravndal writes from Beirut, January 29, 1900:

I receive many inquiries from local merchants which do not admit of the delays involved in writing home for information, and cablegrams are expensive and often unsatisfactory. It would be advantageous to have United States commercial and industrial papers in the consulate. Trade associations in the United States should see to it that American consuls at distant posts receive regularly such publications as will keep them in touch with trade movements

and price fluctuations in the various branches of commerce and industry at home. We receive some monthlies, but no commercial newspapers of a general character.

The Bureau of Foreign Commerce would call attention to the fact that statements are frequently made by consular officers in regard to the value of trade journals in furthering United States interests in foreign countries. The Department has no fund for supplying these publications.

American Trade in Syria: Correction.—Consul Ravndal, of Beirut, under date of February 10, 1900, writes in regard to his report in *ADVANCE SHEETS OF CONSULAR REPORTS* No. 629 (January 16, 1900):*

The paragraph beginning "As to transportation," etc., should read, lines 2 and 3, "a regular service between that port [New York] and Alexandria and the Syrian coast," instead of Alexandretta.

American Horse Meat in Denmark.—Vice-Consul Blom writes from Copenhagen, January 16, 1900:

Several years ago I called the attention of the Danish dealers in horse meat to the American supply. I have now to report that the business is increasing rapidly, and the meat from the United States gives satisfaction. The consumption of horse meat in Denmark is comparatively large. Copenhagen is a distributing port for Sweden, Norway, Finland, Russia, and the German Baltic. Packers should address Levy Brothers, 31 Nyhavn, Copenhagen; Krov & Madsen, 18 Nørregade, Copenhagen. Mr. James Levy, of the above-named firm of Levy Brothers, is now on his way to the United States, and his address is care of the royal Danish consulate in New York City.

Wheat for Edible Pastes.†—Consul Covert writes from Lyons, January 9, 1900:

A large manufacturer to whom I sent a package of Texas wheat for examination writes me that macaroni and all forms of edible pastes can be made from it, but that the sample contains many grains of soft wheat, which may prevent it from being quoted at a high price in the market. He thinks that if the Texas farmers would plant seed wheat from Taganrog, Russia, they would produce a very

* Also in *CONSULAR REPORTS* No. 234 (March, 1900).

† See *ADVANCE SHEETS* No. 646 (February 5, 1900); *CONSULAR REPORTS* No. 234 (March, 1900).

high grade for edible paste, and he would seriously consider a proposition to erect macaroni works in Texas.

No greater service could be rendered the farmers of northern Texas than to forward them a quantity of good Taganrog wheat. I could obtain the same if desired.

New Corporations in Germany in 1899.—Consul-General Guenther writes from Frankfort, January 20, 1900:

In 1899, 364 new concerns were incorporated in Germany with a nominal capital of \$129,620,000. This is the largest number and the largest nominal capitalization since the memorable year of 1872, when 479 companies were incorporated with a nominal capital of \$351,833,000. The following table shows the distribution among the various industries:

Industry.	Capital.	Industry.	Capital.
Mining and smelting.....	\$5,600,000	Breweries.....	\$6,200,000
Quarrying	6,000,000	Building trade.....	9,000,000
Machinery	26,000,000	Banking	6,900,000
Chemistry.....	3,600,000	Railroads	17,000,000
Electricity	8,200,000	Navigation.....	15,700,000
Textile industry.....	4,400,000		

Adulteration of Food Articles in Germany.—The following, dated Frankfort, January 11, 1900, has been received from Consul-General Guenther:

The Deutsche Zuckerindustrie, a journal devoted to the sugar industry, reports that a German manufacturer of fruit sirups was recently fined 30 marks (\$7.14) for adding glucose to fruit sirups. This addition was considered a violation of the law of May 14, 1874, relating to articles of food. The court held that the public, in buying fruit sirups, had a right to expect perfectly pure fruit juice and refined sugar.

French Coal Strike Ended.—Consul Brunot, of St. Etienne, writes, under date of January 11, 1900:

Referring to my former report* upon this subject, I have now to state that the strike of the coal miners, after lasting fifteen days, has terminated. The miners have obtained the following concessions: Miners' federation recognized by the companies; increase of

* See ADVANCE SHEETS No. 644 (February 2, 1900); CONSULAR REPORTS No. 234 (March, 1900).

9 per cent in the wages (10 per cent having been demanded); certain concessions regarding the hours of labor. The strike of the weavers still continues, and the outlook in this direction is very uncertain.

Demand for Railway Supplies in Russia.—Consul Halstead writes from Birmingham, February 19, 1900, that the London correspondent of the Birmingham Daily Post announces:

According to advices which have reached an official quarter here from St. Petersburg, tenders for the supply of two hundred locomotives and some thousands of goods trucks will be invited by the Russian Government in the early spring. The locomotives are to be of unusually heavy make and great power, capable of drawing a load half as heavy again as that allowed for the engines already being employed on the completed sections of the Siberian Railroad.

Chinese Export of Pheasant Skins Prohibited.—Minister Conger writes from Peking, December 28, 1899:

Upon a petition of the Society for the Protection of Game in China, sent through the consular body in Shanghai, the diplomatic corps last September unanimously requested the Tsungli Yamên, as a temporary measure, to prohibit the exportation of pheasant skins. This was done because a great demand had recently sprung up in European markets for their plumage, which increased the price here inordinately; and the birds were consequently being so ruthlessly slaughtered that, if it were not in some way stopped, the pheasants would very soon have been entirely exterminated. The Tsungli Yamên granted the request, and the necessary orders to the customs officials have been issued. This is understood to be only a temporary expedient which may serve until there can be prescribed and enforced some rules and regulations in regard to close and hunting seasons, which will otherwise avert the extermination of these beautiful birds, which are very valuable to the Chinese and the foreigners living in China, but of no great importance elsewhere.

Packing Hams for the Singapore Market.—Consul-General Moseley writes from Singapore, under date of January 3, 1900:

A letter which I have received from W. A. Wafford & Co., of this city, who recently imported from the United States ham, bacon, and lard, contains the statement that "small hams on arrival here turned out bad, owing to the very inefficient method of packing." As soon

as I learned this, I requested a large local dealer in English and Scotch hams to tell me how these hams are packed, and in reply he says:

Hams are generally sent here packed in bran or oats, then sewed in canvas, and afterwards packed in salt, this process preserving the flavor far better than any other method, besides keeping the ham moist. The usual weights for Singapore are from 8 to 12 pounds.

Tariff Changes in Dutch India.—Minister Newel transmits from The Hague, under date of January 25, 1900, translations of royal decrees dated December 30, 1899, one authorizing the governor-general of Dutch India to extend the operation of the old tariff law to the parts of the possessions not mentioned therein; another fixing the import duty on salt at 3.50 florins per 100 kilograms (\$1.40 per 220.46 pounds) in the district of Tapanoli, and at 2 florins (80 cents) elsewhere. The last levies export duties on forest products in those districts lying outside of Java and Madura.

Wharfage Tax at San Tu-ao, China.—Minister Conger writes from Pekin, December 29, 1899, in regard to the additional tax of 2 per cent on the customs duties collected at the newly opened port of San Tu-ao. This levy, says the minister, is in contravention of the treaty engagements with China; but since it is such a small tax and is so very much needed for building jetties, wharves, etc., the diplomatic corps has consented to its collection for a time.

Duty on Mining Machinery for the Klondike.—The consul at Dawson City, Mr. J. C. McCook, reports, under date of Washington, February 7, 1900, as follows:

The Imperial Institute Journal, of London, in its issue of January, 1900, publishes a tariff decision of the Canadian board of customs, according to which elevators or floating dredges, used in mining submerged alluvial gold-bearing deposits, are to be admitted free of duty.

Copper and Silver in Ecuador.—Consul-General De Leon writes from Guayaquil, January 13, 1900:

Within the last few days, a gentleman has brought to my office specimens of copper and silver ores, which analyses show to be very rich. The mines are about 35 miles from the coast, in the province of Ahuay, at an altitude of about 5,000 feet. The investigations so far made are most promising, and it is believed the deposits are of

great extent. Parties in the United States who are interested can obtain full particulars by applying to this office. The property is controlled by a European metallurgist of experience and ability, entirely reliable, and a resident of this Republic for a number of years. The copper mines of Peru are, I am told, paying very handsomely.

Scarcity of Corn in Veracruz.—Under date of January 26, 1900, Consul Canada, of Veracruz, informs the Department that, owing to lack of rain, the corn crop has been short in his consular district, and corn will have to be brought from other parts of the Republic, as it is virtually the staff of life for the large majority of the inhabitants. He suggests that United States exporters give the matter attention.

Unemployed Diamond Workers at Amsterdam.—Under date of December 30, 1899, Consul Hill, of Amsterdam, says that a committee of diamond workers at Amsterdam has issued an appeal for aid, announcing that the number of persons unemployed is placed at 3,000, exclusive of 1,000 who are only partially employed.

Pictures Offered for Sale in Spain.—Consul Washington, of Valencia, under date of January 3, 1900, reports the receipt of a letter from Mr. José Fernandez y Carreras, of that city, offering for sale two reputed Rubens, a Madonna and child and a Magdalen; also a piece of antique silk tapestry 4 yards long by 1.8 yards wide. Photographs of the pictures and tapestry accompany the report, and are filed in the Bureau of Foreign Commerce for examination by interested parties.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) have been transmitted since the date of the last report to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
F. D. Hill, Amsterdam.....	Feb. 3, 1900	Rubber.....	Bureau of the American Republics.
F. S. S. Johnson, Stan-bridge	Feb. 21, 1900	Dairying	Department of Agriculture.

FOREIGN REPORTS AND PUBLICATIONS.

Development of German East Africa.—In *Berichte über Handel und Industrie*, Berlin, January 18, 1900, a table is given showing the value of the trade of German East Africa for the last eight years:

Year.	Imports.	Exports.
1891	\$2,142,200	\$1,780,818
1892	1,916,859	1,673,029
1893	1,835,652	1,328,216
1894	1,705,910	1,160,731
1895	1,810,815	775,205
1896	2,062,281	979,879
1897	2,152,015	1,175,364
1898	2,820,922	1,032,241

The article continues:

Formerly, the entire trade of the coast was in the hands of Zanzibar houses, but the German East Africa Company has recently established branch houses along the coast. As yet there are no banks; trade is carried on with banks in Zanzibar. There are no manufactures of importance. The natives follow agriculture exclusively, but the land does not support the people, as the import figures for rice and grain show. From April to December, 1898, 22,204,772 pounds of rice and 1,814,120 pounds of grain were imported. The imports into German East Africa during the nine months from April to December, 1898, were as follows:

Articles.	Quantity.	Articles.	Quantity.
	<i>Pounds.</i>		<i>Pounds.</i>
Cotton goods.....	6,001,244	Wood, manufactured.....	759,108
Iron manufactures.....	1,291,031	Beverages and liquors.....	1,490,560
Brass and copper manufactures.....	907,388	Rice and cereals.....	24,018,892
Minerals.....	12,453,039	Sugar.....	808,521
Petroleum.....	1,469,404	Tobacco, manufactured.....	86,988
Glassware.....	600,197		

The chief exports are gum copal, copra, wax, ivory, and sesame. Coffee has been an article of export since the year 1895, amounting in 1898 to 298,944 pounds.

Rails and Machinery in Japan.—A British Foreign Office report (annual series No. 2379) says, in part:

The average import of rails for all Japan during the last three years has been something over \$1,216,625. Until 1896 American rails were unheard of in this country; but in that year they made a promising first appearance, forming nearly a sixth of the total import. In the following year they reached more than a third,

and last year more than half, being double that of the British share, which fell from over \$973,300 in 1896 to \$389,320 in 1898. Belgian and German rails were not of much account, but they, too, have suffered from the American competition. The Belgian rails fell from \$141,129 in 1897 to about a quarter of that amount, whilst the German fell only from \$82,731 to \$63,265. As showing the vigorous forward tendency of the American article, I may mention that a few months ago an order was settled in Kobé for some 8,000 tons of rails, value close on \$291,920, for which Carnegie's underbid the lowest British offer by \$3.28 per ton.

In imports of machinery, there was a decided falling off. The value of spinning and weaving machinery brought into this port was barely \$973,300, as against more than double that amount in 1897; but 89 per cent was British, Germany and France being the only competitors. In electrical, mining, printing, paper-making, sewing, and other miscellaneous machinery, the total of \$1,240,958 shows a decrease of only 6 per cent from the preceding year's amount; and, while the British share fell from 36 per cent to 51 per cent, the American share fell from 28 per cent to 20 per cent, the German share advancing from 12 per cent to 24 per cent. As indicating one of the causes of the British falling off, I may mention here an incident relative to bicycles. An important British company which manufactures that article recently wrote to me, saying they were desirous of appointing an agent for the sale of their goods here, inclosing copy of their catalogue, and asking me to recommend a desirable firm, competent and willing to look after their interests. Here is the gist of the reply I received from the firm to whom I communicated the application:

"Must decline with thanks; for the English make of cycles there is no great 'show' in Japan. The British maker is by far too conservative and in every way unaccommodating. We are at present importing machines from America, and can get two smart-looking articles for the price of one English cycle. Of course the finish is not to be compared, but the main thing is the Americans are willing to adapt themselves to the peculiar 'extras' wanted by the Japanese; whereas, the British maker puts too many obstacles in the way, and even in cases where he does adapt himself to the local requirements the prices for 'extras' are prohibitive altogether. We may say this does not refer to cycles alone; it is our general experience."

In locomotives, British imports have recovered ground from the American.

Trade Conditions of Astrakhan.—The following is summarized from *Nachrichten für Handel und Industrie*, Berlin, January 13, 1900:

The Astrakhan government extends upon both sides of the Lower Volga, with an area of 86,340 square miles. The inhabitants, numbering about 1,000,000, are a nomadic people. Their principal occupation is fishing; one-third may be said to be occupied in this way. Many thousand workmen come annually from the interior to hire out for the fishing season, returning home at its close. In the interior, the people are occupied with agriculture and grazing, but the prosperity of the country depends upon the profits of the fisheries. Trade and manufactures depend directly or indirectly upon them. The annual value of this industry is estimated at 100,000,000 rubles (\$51,500,000). It has been noted, therefore, with great alarm, that the amount of fish of late years has perceptibly decreased; particularly have caviare profits lessened. This is attributed to the fact that no measures of protection have been taken for the fishing industries of the Volga and Caspian Sea. The new legislation must direct its attention to the Caspian Sea, since for every 80 of the so-called red fish (sturgeons and others) which are caught in the

Volga 280 come from the Caspian Sea, and for every 600 poods (21,667 pounds) of caviare from the Volga not less than 16,000 poods (577,792 pounds) come from the sea. Interested parties attribute the decline of fish in the Volga to the poisoning of the fish by the leaking of naphtha from the wooden tanks of steamers.

The most important fish are herring, sturgeon, salmon, and carp. They are exported to the interior, the west, southwest, and southern governments, as well as to the markets of Moscow and Nizhni Novgorod. Roumania, Servia, and Bulgaria are also important markets. The exportation of fish amounts annually to 20,000,000 poods (722,240,000 pounds). The finer varieties are sent packed in ice, which is renewed many times on the road.

The export of caviare amounts annually to \$1,030,000 or \$1,545,000. Germany must be considered the most important market for this product. Berlin alone consumes more than all of Austria-Hungary; and the demand, in spite of the steadily increasing price, exceeds the supply. The large-grained caviare, known abroad as Astrakhan caviare, is made of the "beluga" and costs on the spot \$31 to \$41 (sometimes \$62) per pood (36.112 pounds). Caviare made from the stör (another variety of sturgeon) is called "Ossetrowa caviare" and brings \$15 to \$21 per pood. This was originally intended only for home consumption; but since the "beluga caviare" is not made in sufficient quantities, this is sent as a substitute. As a rule, the caviare capacity of a fish corresponds to the tenth part of its weight.

Isinglass plays an important rôle as an article of export. It comes in strips of a pound weight and is exported in strong sacks containing 180.5 pounds. The price is \$62 to \$67 per pood.

Agriculture and grazing come next in importance after fishing as sources of revenue. Wheat and barley are raised, but the farming is of the most primitive character. Vines and fruits are cultivated, and great quantities of mustard and saffron are raised near Sarepta. The number of live stock is estimated at 3,500,000 head. Sheep breeding, unfortunately, receives no particular attention, although very good wool, in spite of the lack of cleanliness, is sent to market.

The extraction of salt is especially important. The yearly production amounts to from 722,240,000 to 794,464,000 pounds. The want of railway facilities hinders a greater development of this industry.

In the whole country there are 430 industrial undertakings, employing about 4,000 workmen; these include small breweries, sawmills, steam mills, brick kilns, and tanneries.

The products of central Asia and Persia pass through Astrakhan. The import of foreign goods is extraordinarily small—a few chemicals from Germany, a small quantity of fancy goods, enameled boxes for packing caviare, sickles, and scythes. The lack of railway facilities is the great drawback to Astrakhan commerce. It is astonishing that a center of trade should have communication with the interior only by a water way, making regular transportation impossible except in the summer. For five months of the year, wagons and sledges must be used, at an expense of 50 copecks per pood (25.7 cents per 36.112 pounds). The question of a railway line to Zarizzen has been considered for years, the great obstacle being that the promoters can not agree whether the road should be built on the left or right side of the Volga.

Pearl Trade of the Persian Gulf.—From *Berichte über Handel und Industrie*, Berlin, January 18, 1900, the following is taken:

Pearl fishing in the Persian Gulf has been carried on since very ancient times, and has suffered few changes in the course of centuries. Slaves from the coast of East Africa are generally employed as divers. Small boats, fishing exclusively

near the shore, employ crews of from five to fifteen men, the larger ones—twenty to fifty men—fishing over the whole gulf.

After the boats have reached good diving grounds, half of the crew is selected for diving. Every diver is provided with a strong line, which is held and managed by a second man on board. To enable the diver to reach the necessary depth, he is weighted with a heavy stone. The nose of the diving helmet is closed with a clamp to prevent the water rushing in. The diver uses a small, braided net basket for gathering the shells loosened from the bottom of the sea. When the basket is filled, or the diver needs fresh air, he gives a signal by pulling on the line, and is at once pulled to the surface to remain a few moments. The diver does not leave the water for hours together. The shells gathered during the day are opened the next morning and the pearls collected.

The profit varies each day, so that it is quite impossible to say that the number of pearls found corresponds to the number of shells gathered. Many pearl banks are, comparatively speaking, rich in shells but poor in pearls, while other grounds poor in shells yield a good profit in pearls.

The depth for pearl fishing varies, but 18 feet may be considered the maximum. The small boats fish along the coast in shallow water of a depth of from 6 to 8 feet.

The larger boats remain out for months at a time, sometimes from the end of June to the beginning of October, only coming once or twice to port in order to sell their pearls and to replenish their supplies. The duration of the diving season depends, however, upon the temperature of the water.

Various attempts have been made to change the method of pearl fishing and to alter the diving helmet; but the Arabs, in whose hands the pearl trade chiefly lies, are conservative to an extraordinary degree. Hundreds of Hindoos also come to the gulf during the season, returning to India at the close. The owners of the diving boats are usually poor and are forced to depend upon the advances of pearl dealers to equip and provision their vessels.

An approximate estimate of the value of the Persian pearl trade is very difficult, since the pearls change hands many times before they are sent away, and no statistics are available even at the two chief markets—Bahrein and Lingah. Sales are often made, of late years, on the open sea. The pearls are sold by weight. They are divided according to quality, color, and form. Only those of the better quality are sent to Europe; the irregular ones remain in India, and the smallest, so-called seed pearls, go to China. Bombay figures as the central market place.

Olive Oil in Greece.—The Bollettino degli Affari Esteri, Rome, January, 1900, says:

The exportation of olive oil from Greece, according to the statistics of foreign commerce, was as follows during the years 1895, 1896, and 1897:

Year.	Quantity.	Value.
	<i>Pounds.</i>	
1895	10,103,422	\$517,945
1896	9,511,353	586,944
1897	15,148,091	926,488

During the same years, the importations of foreign oils into Greece were:

Year.	Quantity.	Value.
	<i>Pounds.</i>	
1895	719,602	\$49,304
1896	1,010,211	102,415
1897	785,297	53,349

As is well known, the olive oil of Greece is inferior in quality, having less body and fineness than the foreign oils, especially the Italian. This is the result not only of the careless manner of gathering the olives, but also of the primitive system of extracting the oil. The common method of harvesting is to allow the olive to mature on the tree; when it falls to the ground, it is allowed to lie for several days exposed to the rain. The olives are then gathered and left to ferment in hot water, then bruised or crushed in stone mills or wooden or iron presses. There are only four refineries for olive oil in the whole Kingdom—one in the island of Andros, the other three in the province of Laconia—all using French machinery. It is estimated that the district of Avia is able to produce from 700,000 to 1,000,000 oke (1,988,000 to 2,840,000 pounds) of oil.

Waterworks in Madeira.—The Board of Trade Journal, London, February 15, 1900, says that tenders are invited by the government of Madeira for the erection of waterworks, and also for the completion of a scheme of drainage for the city of Funchal.

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